THE REPORT

OF THE

PRESIDENT

OF

QUEEN'S COLLEGE, BELFAST,

FOR THE

YEAR ENDING JUNE 10, 1868.

Presented to both Houses of Parliament by Command of Her Majesty.

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FOR HER MAJESTY'S STATIONERY OFFICE.
1868.

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THE REPORT

OF THE

PRESIDENT OF QUEEN'S COLLEGE, BELFAST,

FOR

THE YEAR ENDING JUNE 10, 1868.

TO THE QUEEN'S MOST EXCELLENT MAJESTY.

MAY IT PLEASE YOUR MAJESTY,

I have the honour of presenting to your Majesty the following Report regarding the condition of the College for the year ending the 10th of June, 1868, embracing the three Terms which constituted the Session now concluded. The first Term commenced, as usual, in October last, when the various examinations for Matriculation and Scholarships were held in accordance with the announcements of the calendar; after which time the different courses of lectures and study were vigorously prosecuted in the different departments. I have the satisfaction of stating that the attendance of students during the past year amounted to 396. In the former year the number present, and given in my last Report, was 387. Since the opening of the College no Session has passed over marked by greater diligence and assiduity, and by a more general observance of order and discipline on the part of the students, than the last. The few cases of departure from rule or propriety, which came under my notice, were generally disposed of by myself, without the necessity of having them referred to the jurisdiction of the Council. As attention, good conduct, and zeal always lead to important results, so the improvement and success of the great body of the students, have been highly creditable to themselves, and gratifying to the Professors. In the various testing examinations, whether those conducted within the walls of the College itself, for Scholarships, Exhibitions, and Prizes, or those of the Queen's University for its high distinctions and rewards, many of our students, during the past year, have won positions for themselves which attest their past labours and exertions, whilst affording an encouraging earnest of their future success in life. The reports of the Civil Service Commissioners, and of different Governmental authorities at home and abroad, continue to afford most satisfactory testimony that the students of this College still hold their place amongst those of the other universities of the empire, not only in the arenas of scientific and literary competition, but in the practical work afterwards assigned to them in the various departments of the public service. Testimonies are constantly reaching the College, from various quarters, regard-

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ing the advancement of former students, which establish the important fact that the instruction imparted within these walls is sound in its quality, and extensive in its range.

The subjoined tabular returns will present a condensed view of the condition of the College from the date of its inauguration in 1849-50 to the close of this Session:—

I.—NUMBERS and RELIGIOUS PERSUASIONS of STUDENTS attending Lectures in QUEEN'S COLLEGE, BELFAST, in each Session from its opening.

SESSIONS.	Matriculated.	Non-Matriculated.	Total.	Established Church.	Roman Catholic.	Presbyterian.	Methodist.	Independent.	Various.	Total.
1849-50, . .	90	105	195	33	5	145	4	1	7	195
1850-51, . .	110	75	185	33	10	136	4	1	1	185
1851-52, . .	120	69	189	40	14	129	5	–	1	189
1852-53, . .	101	53	154	33	15	100	4	–	2	154
1853-54, . .	114	54	168	36	14	107	6	–	5	168
1854-55, . .	118	65	183	34	14	131	3	–	1	183
1855-56, . .	119	74	193	33	19	131	5	2	3	193
1856-57, . .	136	58	194	35	14	131	3	2	9	194
1857-58, . .	153	54	207	31	14	154	4	1	3	207
1858-59, . .	160	63	223	45	14	153	8	2	1	223
1859-60, . .	199	58	257	43	16	184	8	2	4	257
1860-61, . .	239	73	312	57	22	216	7	–	10	312
1861-62, . .	299	76	375	59	17	256	13	4	16	375
1862-63, . .	335	53	388	61	24	275	11	3	14	388
1863-64, . .	340	47	387	63	26	261	10	3	24	387
1864-65, . .	356	49	405	58	22	285	9	1	30	405
1865-66, . .	360	53	413	60	19	281	13	2	38	413
1866-67, . .	357	30	387	57	19	225	10	1	67	387
1867-68, . .	357	33	390	59	16	233	25	2	55	390

II.—NUMBERS and RELIGIOUS PERSUASIONS of STUDENTS who have entered QUEEN'S COLLEGE, BELFAST, in each year since its opening.

SESSIONS.	Matriculated.	Non-Matriculated.	Total.	Established Church.	Roman Catholic.	Presbyterian.	Methodist.	Independent.	Various.	Total.
1049-50, . .	90	105	195	33	5	145	4	1	7	195
1850-51, . .	51	42	93	15	7	68	1	–	2	93
1851-52, . .	42	40	82	25	7	47	2	–	1	82
1852-53, . .	31	23	54	16	7	28	2	–	1	54
1853-54, . .	39	23	62	14	5	36	3	–	4	62
1854-55, . .	41	38	79	13	6	56	2	–	2	79
1855-56, . .	33	29	62	17	5	36	2	2	–	62
1856-57, . .	40	28	68	18	4	40	1	–	5	68
1857-58, . .	43	28	71	8	6	55	2	–	–	71
1858-59, . .	51	37	88	24	8	51	4	1	–	88
1059-60, . .	66	24	90	14	6	64	4	–	2	90
1860-61, . .	96	41	137	29	13	85	3	–	7	137
1861-62, . .	114	38	152	27	5	101	6	3	10	152
1862-63, . .	115	22	137	23	12	92	5	–	5	187
1863-64, . .	109	18	127	25	5	86	3	1	7	127
1864-65, . .	108	27	135	22	6	97	3	–	7	135
1065-66, . .	88	30	110	17	7	83	5	–	6	110
1866-67, . .	95	11	106	10	5	61	10	–	14	106
1867-68, . .	90	22	111	20	5	03	1	1	22	111
	1,342	*026	1,967	375	125	1,294	63	9	101	1,968

* Of the 626 who entered as non-matriculated Students, 115 afterwards passed a matriculation examination. The College Register contains 1,457 matriculated and 512 non-matriculated, in all 1,968 students.

III.—**Return** showing the **Number** of **Students** attending the Lectures of each **Professor** in each year since the opening of the College.

Professor of	1849-50.	1850-51.	1851-52.	1852-53.	1853-54.	1854-55.	1855-56.	1856-57.	1857-58.	1858-59.	1859-60.	1860-61.	1861-62.	1862-63.	1863-64.	1864-65.	1865-66.	1866-67.
Greek,	71	74	46	23	32	30	43	36	44	58	77	100	140	157	120	133	118	74
Latin,	63	72	44	25	32	35	40	29	44	54	72	94	139	149	113	118	112	96
Mathematics,	86	70	51	36	42	44	45	52	55	62	78	95	106	122	111	113	90	80
English,	52	46	53	35	44	44	51	43	56	65	73	100	116	135	125	128	113	102
Modern Languages,	62	56	41	31	34	52	43	52	56	63	78	150	177	150	125	146	151	150
Celtic,	The Lectures open to the public.														Vacant.			
Natural Philosophy,	48	43	61	29	40	35	35	37	43	34	46	95	95	104	106	102	116	113
Natural History,	12	49	75	52	58	68	58	69	62	87	84	77	77	83	112	121	101	97
Mineralogy,	*–	6	14	13	15	18	9	20	13	11	16							
Logic and Metaphysics,	3	–	45	30	44	45	43	51	46	54	44	79	106	114	103	91	116	101
Chemistry,	40	56	75	53	62	70	60	76	68	88	99	82	106	101	104	122	104	–
Engineering,	10	13	15	9	12	12	8	17	16	11	16	14	16	25	30	31	29	27
Agriculture and Medical Jurisprudence,	13	21	24	14	22	17	16	20	25	22	27	21	24	22	– 25	– 30	– 30	– 35
Anatomy,	35	41	55	61	53	63	65	46	52	68	81	101	107	105	114	132	138	155
Medicine,	9	17	17	12	15	18	33	27	19	22	29	25	42	27	36	44	48	67
Surgery,	24	15	26	29	28	30	48	32	30	29	39	51	53	54	47	50	55	77
Midwifery,	14	10	12	16	17	10	24	13	7	17	14	26	36	22	34	10	23	36
Materia Medica,	11	14	16	17	17	23	25	11	18	22	27	33	38	37	29	38	47	47
English Law,	17	16	17	15	11	15	10	14	12	13	11	16	14	12	12	14	19	13
Jurisprudence,	11	11	23	10	19	11	15	12	27	20	23	19	20	29	27	31	34	26

This return is given more fully in detail in the Appendix, pp. 14, 15.
The return of Lectures delivered in each Session appears in pp. 20, 21 of the Appendix.

IV.—**Return** of the Number of Medical Students in attendance in each Session.

Session.	Matriculated.	Non-Matriculated.	Total.	Session.	Matriculated.	Non-Matriculated.	Total.
1849–50,	28	27	55	1859–60,	56	39	95
1850–51,	20	35	55	1860–61,	70	46	116
1851–52,	25	39	64	1861–62,	81	48	129
1852–53,	29	33	62	1862–63,	89	33	122
1853–54,	29	37	66	1863–64,	110	33	143
1854–55,	39	36	75	1864–65,	126	25	151
1855–56,	33	48	81	1865–66,	130	29	159
1856–57,	36	25	61	1866–67,	157	17	174
1857–58,	35	32	67	1867–68,	163	18	181
1858–59,	45	34	79				

It will be observed from these returns that a most remarkable change has of late years taken place in the relative numbers of matriculated and non-matriculated students, particularly since the Queen's University has come into full operation, and is exercising its functions and privileges in the conferring of degrees in the several departments of Arts, Medicine, and Law. Let the Session, 1855-56, furnish an example. In that year 193 students were in attendance in the College; of those 119 were matriculated, and 74 non-matriculated. During the past year, the 390 students present have been made up of 357 matriculated, and only 33 non-matriculated—17 of those belonging to the Medical School.

Whilst I rejoice that the existence and exercise of university privileges have produced the desired and natural results, I cannot but express regret that a larger number of young men—sons, for instance, of merchants and men of enterprise and wealth—do not avail themselves of the high advantages presented to them of attending, as non-matriculated students, such lectures of the distinguished Professors of this College as might contribute to extend their knowledge, educate their minds, and elevate their tastes for intellectual pursuits. On the continent of Europe, in America, in England, and in Scotland particularly, similar advantages have been properly appreciated, and with most advantageous results. The rapid acquirement of wealth demands the accessories of intellectual cultivation and mental refinement. Any youth, devoting a little time daily for two or three sessions to such collegiate classes, as desire, habit, or future avocation might suggest, would easily acquire advantages elevating to himself and beneficial to society.

The continued prosperity of the Medical School will be easily deducible from the table that refers to it. That this important department should have steadily risen from 55 students, (only 28 then being matriculated,) in the year 1850, to 181 in the past Session, 163 being matriculated, is a very remarkable increase, and fully justifies the choice which the original founders of the College made in selecting Belfast, as the site for the Northern College, principally in regard to the advantages which this town presents for founding and sustaining a great Medical School. The General Hospital of Belfast, now extended and increased in its accommodation by the great munificence of Mr. Mulholland and Mr. Charters—the zeal and ability of the medical staff presiding over and giving instruction in that admirable establishment—the existence of the new and commodious anatomical rooms within the College grounds—the teaching power within the medical faculty itself, and the advantages accruing to the Medical School by the contiguity of the Botanic Gardens,—all these, have contributed to place this department of the College in a very satisfactory condition.

Respecting the anatomical and medical buildings, which are now nearly completed, they are certainly amongst the best in the kingdom for spaciousness, ventilation, and adaptation to the purposes to which they are devoted. The medical classes are now transferred to this building, whilst the museum belonging to that department has been placed in a suitable room within its walls.

The new Library is now nearly finished, and will be ready for occupation at the beginning of the ensuing Session. When opened, the large reading-room on the ground floor and the fine galleries above, with the retiring-rooms below, will constitute a most handsome and commodious building. On the part of all the collegiate authorities, I must tender my thanks to the heads of two successive Governments for obtaining from Parliament the necessary grants for founding and carrying on this most necessary work. We accept this liberality in regard to those buildings as an expression of confidence on the part of your Majesty's advisers, that this College is destined to accomplish the great objects contemplated by its illustrious founders.

One only drawback, in reference to the Library and Museums of the College, a sense of duty compels me to notice in this Report. Personally I took my full share in the efforts that secured, some years ago, a grant of £1,600 per annum to each of the Queen's Colleges, for the founding and extending of the Libraries and

Museums, and for the constant supply of the necessary objects of illustration, and of apparatus for experiments—all absolutely indispensable in this age of scientific discovery and advancement. £1,000 a year to each College still fortunately remains for its maintenance, and for the purposes above indicated. £600 a year of the £1,600 referred to was abstracted for increasing the salaries of the Professors. That just increase, too long withheld, ought to have been made from funds entirely distinct, without infringing on a grant barely adequate for founding and sustaining such Libraries and Museums as ought to exist in a public Governmental College, embracing all the departments of Arts, and those also of Medicine and of Law. I draw your Majesty's attention to the want which is already felt through this reduction of the grant, hoping that an application, soon to be made for its restoration, may, on its merits, be favourably received.

Notwithstanding the urgency with which the question of intermediate schools has been pressed for the last fourteen years on different administrations, no step has yet been taken by Government to found or foster such establishments in Ireland. The want of academies, intermediate between the Universities and the National schools is as universally felt by parents and youths as it has been, and still is, unreservedly admitted by your Majesty's advisers. The question may be connected with difficulties of various kinds; but where the deficiency extends to all the provinces, and affects the interests of all denominations and of the community at large, those obstacles would vanish, were the question taken up with a fixed determination to extend the blessings of a sound and practical education, in order to qualify young men for the colleges, for the public service, for professions, and for mercantile pursuits. The proposals to have the Classics and French taught in the National Schools have been rejected, whilst the investigations of the present Commission on Irish Education are strictly limited to the question of primary instruction. That Commission, however, is enabled even under these restricted limits of its instructions to deal with the subject as it relates to the practicability and desirableness of introducing the teaching of Classics and French, in certain cases and under prescribed regulations, into National schools; and I trust that its members may be disposed to enter fully into the consideration of a question of great importance to the inhabitants of this country. Scotland has long enjoyed the advantages of intermediate education, and the results have as long been felt in elevating its population in the social and intellectual scale. England is supplying the deficiency to some extent, through her system of Proprietary schools, those schools now embracing a large number of pupils. Ireland is a poor country. The National schools swept away many of the academies in which the higher branches were taught, and it devolves on any Administration to encourage, at the small expense required, the voluntary efforts of the community to secure to thousands the blessings of an education suited to the demands of the time and of the community at large.

At the beginning of the session the sum of £1,400 was appropriated to the scholarships in the different departments, and £100 for class prizes, making up the annual amount placed for these purposes on the Consolidated Fund. The Tennent and Dronnan exhibitions; the valuable and important ones of Dr. Sullivan, of Mr. Charters in medicine, literature, and science; and of Mr. Coates in engineering, have also been awarded to the successful competitors. Mr. R. Mackay Wilson, for reasons satisfactory to the Council, has held his exhibitions over in order to add them afterwards to those he has founded. In assigning all these scholarships prizes and exhibitions the Council enter most carefully into a consideration of the answering of the students both positive and relative, always making merit the test of success.

The Deans of Residences have furnished me with reports regarding the character and conduct of the students placed by statute under their spiritual jurisdiction. In so far these reports are satisfactory; but until the law is changed giving these functionaries more direct and extended jurisdiction, the important design of their having been attached to the colleges, and of their appointment cannot be fully answered. The Presbyterian Dean, Dr. Porter, has the advantage of having many of the students placed directly under his charge in the General Assembly's college. The same will apply in future to those of the Wesleyan body, as I am officially instructed that the Rev. William Arthur, the President of their now college here, has been nominated by the Conference to succeed the Rev. Mr. M'Kay, as Dean of Residences. The Rev. Mr. Hoare has informed me that next session he shall be enabled to take special charge of the students of the Church of England.

Without my strong testimony once more expressed regarding the spirit of harmony, co-operation, and good will that continues to pervade the whole college, this report would be incomplete. All through the professorial ranks and amongst the students themselves, belonging as they do to various Churches, true sentiments of cordiality continue to unite the entire body; and it affords me the utmost satisfaction to bear record that no instance of religious dissension has ever come under my notice. In this respect, as well as in its general success and influence, this non-sectarian college is accomplishing the noble designs of its patrons and founders, and of Parliament itself. Already it has abundantly proved its adaptation to a mixed industrial community.

As one of the constituents of the Queen's University in Ireland, this college continues to hold its high position. The number of students it furnishes yearly for graduation, as well as the distinguished place they annually occupy in the lists of University honours and exhibitions, affords a most satisfactory proof of the great ability of the professors, and the zeal and talent of their pupils. That any difficulty should arise as to the granting of representation in Parliament to the Queen's University under the new Reform Act is a matter deeply to be lamented. The justice and expediency of this has been officially presented to your Majesty's advisers; and the question has, in various ways, and from the most influential quarters been pressed on their attention; and whilst the strength of the claim is fully admitted, it is to be hoped that a member will now be assigned to our University. To leave it in a state of isolation as the only unrepresented University in the empire, when already it presents a constituency of 780 unsurpassed by any other for general intelligence—a constituency which will steadily increase every year, would injure the great interests of education, and deprive the graduates of constitutional privileges to which they are justly entitled. The average annual increase of graduates is about 86.

Various returns will be found given at full length in the subjoined Appendix—viz., statements of the fees paid to each professor, of the number of students in each class, of the number of lectures delivered from the different chairs, together with the accounts of expenditure, an enlarged digest of subjects, and the papers used at the various examinations during the past session.

All of which, on behalf of this College, is testified by your Majesty's most dutiful servant,

P. SHULDHAM HENRY,
President.

QUEEN'S COLLEGE, BELFAST,
3rd July, 1868.

APPENDIX.

APPENDIX, No. 1.

Appendix, No. 1.

Queen's College, Belfast, and Queen's University.

Queen's College, Belfast, and Queen's University.

The College is a Corporation under the name and style of "Queen's College, Belfast." It was founded under the provisions of the Act 8 & 9 Victoria, cap. 66, intituled "An Act to enable Her Majesty to endow new Colleges for the Advancement of Learning in Ireland." Under the powers given by this Act, it was determined to found three Colleges. Belfast, Cork, and Galway, were selected as the sites of these Colleges, and on the 30th day of December, 1845, letters patent were issued, incorporating them. The Presidents and Vice-Presidents of the three Colleges were formed into a Board, called "The Board of Queen's Colleges," for the purpose of drawing up the statutes and arranging the system of education to be pursued in them.

On the 4th of August, 1849, the Professors were appointed, and the Colleges opened for the reception of students on the 30th October, in the same year.

Letters patent, constituting the statutes, were issued on the 11th of December, 1849, and a further charter was issued in the year 1863.

The Council of the College.

The President.
The Vice-President.
C. MacDouall, LL.D., Professor of Greek.
James Thomson, A.M., Professor of Civil Engineering.
P. Redfern, M.D., Professor of Anatomy.
J. Purser, M.A., Professor of Mathematics.
W. Nesbitt, M.A., Professor of Latin.
J. Cuming, M.D., Professor of Medicine.

Professors.

The Greek Language, . .	Charles MacDouall, LL.D., M.R.A.S.
The Latin Language, . .	William Nesbitt, M.A.
History and English Literature,	Charles Duke Yonge, B.A. Oxon.
Modern Languages, . .	A. L. Meissner, PH.D.
Mathematics, . . .	John Purser, M.A., M.R.I.A.
Natural Philosophy, . .	Joseph David Everett, M.A., D.C.L.
Chemistry, ...	Thomas Andrews, M.D., F.R.S., M.R.I.A.
Natural History, . . .	Wyville Thomson, LL.D., F.R.S.E., F.G.S., M.R.I.A.
Logic and Metaphysics, .	Rev. James M'Cosh, LL.D.
Civil Engineering, . .	James Thomson, C.E., A.M.
Agriculture, ...	John F. Hodges, M.D., F.C.S.
Anatomy and Physiology, .	Peter Redfern, M.D. Lond., F.R.C.S.
Practice of Medicine, . .	James Cuming, M.D.
Practice of Surgery, . .	Alexander Gordon, M.D.
Materia Medica, . . .	James Seaton Reid, M.D.
Midwifery, ...	R. F. Dill, M.D.
English Law, . . .	Echlin Molyneux, A.M.
Jurisprudence and Political Economy, . . .	T. E. Cliffe Leslie, LL.B.

Appendix, No. 1.

Queen's College, Belfast, and Queen's University.

OFFICE BEARERS.

Curator of Museum,	The Professor of Mineralogy and Geology.
Registrar,	Rev. Richard Oulton, D.D.
Librarian,	Rev. George Hill.
Bursar,	Alexander Dickey, Esq.

DEANS OF RESIDENCES.

United Church of England and Ireland,	Rev. Edward N. Hoare, A.B.
General Assembly of the Presbyterian Church in Ireland,	Rev. Josias Leslie Porter, D.D., LL.D.
Irish Association of Non-Subscribing Presbyterians,	Rev. John Porter.
Wesleyan Methodists,	Rev. Joseph Wm. M'Kay.

The students of the College are either Matriculated or Non-matriculated. All the courses for Matriculated students in Arts, including the Department of Civil Engineering, and also in the Faculties of Medicine and of Law, will be found in the Calendar, which is published annually.

Non-matriculated students, on paying the regulated class fees, and signing an engagement to observe order and discipline in the College, are permitted, without undergoing a preliminary examination, to attend any separate course or courses of Lectures; but are not permitted to become candidates for Scholarships or Prizes, or to enjoy other privileges of the Matriculated students.

Students in any of the Faculties can be admitted *ad eundem* from the other Queen's Colleges, or from any University capable of granting degrees.

COLLEGIATE SCHOLARSHIPS.

In the FACULTY OF ARTS—30 Junior Scholarships, of £24 each, are awarded to Undergraduates—15 for proficiency in Literature, and 15 for proficiency in Science; also, 8 Senior Scholarships, of £40 each, to Graduates, one being limited to students who have also completed the course for the degree of LL.B.; and 5 Scholarships, of £20 each, to Engineering Students.

In the FACULTY OF MEDICINE—8 Junior Scholarships, of £25 each, are awarded.

In the FACULTY OF LAW—3 Junior Scholarships, of £20 each, are awarded.

SCHOLARSHIPS AWARDED IN THE SEVERAL FACULTIES, 1866-67.

8 Senior Scholarships awarded.
21 Junior Scholarships in Arts awarded.
4 Engineering Scholarships.
8 Medical Scholarships.
3 Law Scholarships.

1867-68.

8 Senior Scholarships awarded.
21 Junior Scholarships in Arts awarded.
5 Engineering Scholarships.
6 Medical Scholarships.
3 Law Scholarships.

By an order of Her Majesty in Council, of 21st May, 1855, applying to the Civil Service, it is ordained that "every person nominated to a junior situation should obtain a certificate of qualification before entering on his duties." The ordinary classes in Queen's College embrace the branches required in the Examinations for the Civil Service, and also in the Examination for students intending to become candidates for commissions in the Royal Artillery and Engineers, and for appointments to the Civil Service of India, both of which are now thrown open to public competition.

QUEEN'S UNIVERSITY IN IRELAND.

Appendix, No. 1.

Queen's College, Belfast, and Queen's University.

The charter founding the Queen's University in Ireland received the Royal sanction in the year 1850, and it provides that its Senate should have the power of conferring upon the students of the Queen's Colleges of Belfast, Cork, and Galway, such degrees and distinctions, in the Faculties of Arts, Law, and Physic, as are granted and conferred in other Colleges and Universities of Great Britain and Ireland. It further ordains that any of the students of the three Queen's Colleges, who shall have obtained such degrees in any of the several Faculties of Arts, Medicine, and Law, as shall be conferred by the Chancellor and Senate of the Queen's University, shall be fully possessed of all such rights, privileges, and immunities, as belong to similar degrees granted by other Universities or Colleges, and shall be entitled to whatever rank and precedence is derived from similar degrees granted by other Universities.

By the charter of the Queen's University, candidates for Degrees in Medicine are required to have attended *at least two courses of Medical Lectures* in some one of the Queen's Colleges. For the remainder of the courses of Medical Lectures, authenticated certificates will be received from the Professors or Lecturers in Universities, Colleges, or Schools, recognised by the Senate of the Queen's University in Ireland.

The Chancellor and Senate also have the power of admitting, by special grace, Graduates of other Universities to similar and equal degrees.

In order to obtain a degree or diploma in the Queen's University it is necessary to enter the College as a Matriculated Student, to pass the entrance or Matriculation Examination, and to pursue a fixed course of study.

The Matriculated Students may be classified as follow:—

I. Those intending to proceed to the Degrees of A.B. and A.M.
II. ,, ,, Degree of M.D.
III. ,, ,, Diploma of Elementary Law.
IV. ,, ,, Degrees of LL.B. and LL.D.
V. ,, ,, Diploma of Civil Engineering.
VI. ,, ,, Diploma of Surgery.

THE SENATE.

Chancellor.—The Right Honorable George William Frederick, Earl of Clarendon, K.G., G.C.B., &c.
Vice-Chancellor.—The Right Hon. Maziere Brady, P.C., M.R.I.A., &c.
The Right Hon. David R. Pigot, Lord Chief Baron of the Exchequer, M.R.I.A., &c.
The Rev. P. Shuldham Henry, D.D., President Queen's College, Belfast.
Sir Robert Kane, F.R.S., M.R.I.A., &c., President Queen's College, Cork.
Edward Berwick, Esq., President Queen's College, Galway.
Sir Richard Griffith, Bart., LL.D., M.R.I.A., Commissioner of Public Works.
Sir Dominic J. Corrigan, Bart., M.D., M.R.I.A., Physician in Ordinary to the Queen in Ireland.
Major-General Sir Thomas Askew Larcom, R.E., K.C.B., LL.D., F.R.S., M.R.I.A., &c.
James Gibson, A.M., M.R.I.A., Barrister-at-Law.
The Right Hon. James Henry Monahan, Lord Chief Justice of the Common Pleas.
Robert Adams, A.M., M.D., F.R.C.S.
The Right Honorable Sir Robert Peel, Bart., M.P.
The Right Reverend the Lord Bishop of Killaloe, D.D.
His Grace the Archbishop of Dublin.
Thomas A. Shillington, Esq., J.P.
The Right Honorable the Earl of Dunraven and Mount-Earl, K.P.
The Lord Talbot de Malahide, F.R.S., P.R.I.A.
The Lord Clermont, D.L.
Right Honorable William Monsell, M.P.
Right Honorable Thomas O'Hagan, Justice Common Pleas.
William K. Sullivan, esq., PH.D.
David Ross, M.A., LL.B.
Secretary.—G. Johnstone Stoney, M.A.—Office, Dublin Castle.

The Senate holds its sitting in Dublin Castle, where the examinations of the students of the three Colleges, for Graduation and University Exhibitions, are annually conducted by Examiners appointed by the Senate from year to year.

APPENDIX, No. 2.

RETURN of the NUMBER of STUDENTS attending each CLASS in the Queen's College, Belfast, in each Year.

CLASS.	SESSION.								
	1849-50.	'50-51.	'51-52.	'52-53.	'53-54.	'54-55.	'55-56.	'56-57.	'57-58.
Greek—1st year,	71	47	28	16	21	26	29	24	31
,, 2nd ,,	–	37	18	7	11	12	14	12	13
,, Higher,	–	–	–	–	–	–	–	–	–
Latin—1st year,	63	45	27	19	21	24	27	19	33
,, 2nd ,,	–	27	17	6	11	11	13	10	11
,, Higher,	–	–	–	–	–	–	–	–	–
The English Language,	52	46	28	20	24	28	31	24	36
History and English Literature, Senior ,, ,,	–	–	25	15	20	10	20	19	20
Modern Languages (French, German, Italian),	62	36	41	27	34	37	29	40	40
Senior ,,	–	20	28	16	15	15	19	12	16
The Celtic Languages,	*The Lectures in each Session open to the Public.*							–	–
Mathematics—1st year,	86	58	40	25	29	33	30	35	39
,, 2nd ,,	–	12	11	11	13	11	15	17	16
,, Higher,	–	–	–	–	–	–	–	–	–
Nat. Philosophy—Higher Class,	–	–	–	–	–	6	0	8	7
,, Mathematical Physics, &c.	32	32	46	24	29	23	24	19	26
,, Experimental Physics,	48	59	57	29	40	34	36	37	41
,, Practical Mechanics,	7	3	6	3	4	3	3	2	–
Natural Philosophy applied,	–	–	–	–	–	–	–	–	7
Chemistry,	37	53	63	44	51	60	50	70	60
Practical Chemistry,	6	7	14	10	15	14	12	10	11
Laboratory,	–	6	8	8	9	9	10	15	10
Zoology,	12	34	35	29	31	43	31	43	34
Botany,	12	49	46	35	37	46	36	44	34
Physical Geography,	–	–	29	17	21	19	20	21	28
Logic,	3	–	27	17	21	26	20	27	22
Metaphysics,	–	–	18	15	16	11	17	20	15
Higher Logic and Metaphysics,	–	–	6	7	7	8	6	7	9
Mineralogy and Geology,	*Public.*	6	14	13	15	13	9	20	13
Surveying,	10	9	9	6	6	9	4	–	–
Civil Engineering,	–	4	6	3	4	3	4	17	14
Theory of Agriculture,	11	8	7	2	6	5	5	4	7
Practice of Agriculture,	–	5	8	2	5	5	1	1	3
Diseases of Farm Animals,	–	5	3	2	5	5	1	1	4
Medical Jurisprudence,	2	8	14	10	13	8	10	15	16
Anatomy,	25	36	48	45	44	51	44	39	39
Practical Anatomy,	27	32	35	49	41	46	53	33	41
Practice of Medicine,	9	17	17	12	15	18	33	27	19
Practice of Surgery,	24	15	26	29	28	30	48	32	30
Materia Medica,	11	14	16	17	17	23	25	11	18
Midwifery,	14	10	12	16	17	18	24	13	7
Law of Property, Equity of Bankruptcy, Common and Criminal Law, Evidence and Pleading,	17	16	17	15	11	5	10	14	12
Jurisprudence and Political Economy, Arts,	–	–	12	2	9	6	8	2	18
Civil Law, Constitutional, Colonial, and International Law, Jurisprudence,	11	11	13	8	10	5	9	10	10
Arabic,	–	–	–	–	–	–	–	–	–
Hindustani,	–	–	–	–	–	–	–	–	–
Sanskrit,	–	–	–	–	–	–	–	–	–

APPENDIX, No. 2—*continued.*

RETURN of the NUMBER of STUDENTS attending each CLASS in the Queen's College, Belfast, in each Year—*continued.*

CLASS.	SESSION.									
	'58-59.	'59-60.	'60-61.	'61-62.	'62-63.	'63-64.	'64-65.	'65-66.	'66-67.	'67-68.
Greek—1st year,	36	45	89	81	83	66	79	83	49	47
" 2nd "	17	23	25	49	83	44	40	49	21	19
" Higher,	5	4	4	7	7	9	12	8	4	5
Latin—1st year,	34	46	69	84	83	65	78	64	50	48
" 2nd "	18	22	23	49	60	40	33	44	40	34
" Higher,	2	3	2	6	6	8	7	4	6	7
The English Language,	41	49	72	85	85	70	80	87	49	46
History,	24	24	28	5	8	6	4	4	5	9
English Literature,				30	41	52	48	42	52	41
Modern Languages (French, German, Italian),	50	76	140	124	110	99	110	115	109	115
Senior "	13	17	10	54	43	26	36	38	46	33
The Celtic Languages,	*The Lectures in each Session open to the Public.*						–	–	–	–
Mathematics—1st year,	45	61	83	93	102	85	92	75	62	58
" 2nd "	14	13	13	13	15	20	17	19	12	22
" Higher,	4	6	3	–	5	6	4	4	6	33
Nat. Philosophy—Higher Class,	4	9	–	–	–	–	5	4	–	9
" Mathematical Physics, &c.	25	24	64	67	72	69	80	88	58	51
" Experimental Physics,	28	42	87	86	94	95	87	120	104	90
Natural Philosophy applied,	3	4	4	–	2	5	6	7	4	6
Chemistry,	74	81	64*	89	89	81	93	95	91	84
Practical Chemistry,	14	21	21	20	24	28	44	37	44	51
Laboratory,	11	10	12	15	15	8	14	16	16	16
Zoology,	63	56	37*	57	86	90	82	84	92	83
Botany,	62	55	40*	56	82	90	92	27	50	51
Physical Geography,	23	28	30	7†	7	–	–	–	–	–
Logic,	29	29	35	65	66	57	49	68	52	43
Metaphysics,	19	15	24	22	34	40	40	41	39	29
Higher Logic,	8	–	–	10	12	25	14	24	33	22
Mineralogy and Geology,	11	16	7‡	11	10	12	14	15	5	11
Engineering, 1st year,	7	12	9	10	11	15	15	14	12	8
Engineering, 2nd year, lectures,	3	4	4	6	11	8	12	10	8	10
Engineering, 2nd year, practice,							12	9	8	10
Engineering, 3rd year, lectures,	–	–	–	–	3	7	7	7	7	6
Engineering, 3rd year, practice,							7	7	5	6
Theory of Agriculture,	7	7	6	8	6	–	–	–	–	–
Practice of Agriculture,	1	4	3	1	–	–	–	–	–	–
Diseases of Farm Animals,	2	3	2	1	–	–	–	–	–	–
Medical Jurisprudence,	13	17	14	18	16	25	30	28	35	33
Anatomy,	59	60	86	83	83	87	99	109	127	120
Practical Anatomy,	44	62	80	85	91	96	126	124	149	159
Practice of Medicine,	22	29	25	42	27	30	44	48	67	70
Practice of Surgery,	29	39	51	53	53	48	48	55	77	81
Materia Medica,	22	27	33	38	37	29	38	47	47	38
Midwifery,	17	14	26	36	22	34	19	23	36	37
Law of Property, Equity and Bankruptcy, Common and Criminal Law, Evidence and Pleading,	13	16	16	14	12	12	14	19	13	20
Political Economy, Arts,	9	7	10	8	18	17	20	15	10	8
Civil Law; Constitutional, Colonial, and International Law; Jurisprudence,	11	17	10	12	11	10	11	19	11	16
Arabic,	–	1	–	–	–	–	–	–	–	–
Hindustani,	–	2	3	2	3	–	–	–	–	–
Sanskrit,	–	6	3	4	5	4	4	–	–	–
Operative Surgery,	–	–	–	–	11	2	–	16	23	12

* No Arts Students this Session, owing to change of Statutes.
† Not now required in third year Arts.
‡ No Engineering Students this Session, owing to change of Statutes.

APPENDIX,

Return of the Amount of Fees received by each

Professor of	1849-50.		1850-51.		1851-52.		1852-53.		1853-54.		1854-55.		1855-56.		1856-57.		1857-58.	
	£	s.	£	s.	£	s.	£	s.	£	s.	£	s.	£	s.	£	s.	£	s.
Greek,	*88	10	83	0	50	0	27	5	38	5	46	5	51	15	44	15	51	0
Latin,	*73	15	79	0	50	10	51	5	38	5	44	5	47	15	39	15	53	0
English History and Literature,	50	5	50	5	47	10	31	5	43	5	45	5	59	5	43	15	57	10
Logic & Metaphysics,	6	0	–		† 59	5	34	5	37	15	41	0	41	15	48	5	46	15
Mathematics,	116	15	97	10	69	15	43	0	54	10	59	0	60	10	62	15	69	10
Natural Philosophy,	79	5	70	15	99	10	47	0	73	15	76	15	59	10	62	15	72	0
Chemistry, Practical Chemistry	85	5	104	0	117	5	91	10	111	10	131	15	105	10	133	0	113	10
Anatomy and Physiology, Practical Anatomy,	143	0	170	0	195	15	230	10	228	0	250	0	256	0	101	0	206	0
Natural History and Botany,	20	10	69	0	70	15	50	15	55	0	76	15	59	10	56	0	52	10
Modern Languages,	97	0	84	0	63	0	50	0	61	0	85	0	74	0	86	0	96	0
Mineralogy and Geology,	–		7	10	24	15	17	15	20	15	18	0	12	10	37	0	20	5
Jurisprudence and Political Economy,	20	0	21	0	35	15	18	15	28	0	14	10	29	5	23	10	31	15
English Law,	32	0	29	0	37	0	23	0	20	0	16	0	21	0	27	0	21	0
Civil Engineering,	16	0	24	10	22	0	14	0	17	15	21	0	13	10	27	0	22	0
Agriculture and Medical Jurisprudence,	15	10	41	0	49	5	22	0	46	0	32	15	26	0	25	10	40	5
Practice of Medicine,	17	0	31	0	32	0	18	0	30	0	30	0	56	0	43	10	26	0
Surgery,	41	0	21	10	36	0	51	0	43	0	43	0	74	0	42	10	34	0
Materia Medica,	22	0	28	0	26	0	29	0	33	0	43	0	45	0	20	0	34	0
Midwifery,	28	0	18	0	22	0	27	0	31	0	33	0	44	0	24	0	12	0
Teacher of Drawing,	–		–		–		–		–		–		–		32	0	25	0

* In the Session of 1849–50, Medical Students were required to attend the Greek and Latin Classes, but have since been exempt from attending either class.

† Professor M'Cosh was appointed in Session 1851–52, and taught and received fees from Students properly belonging to the previous Session.

Queen's College, Belfast, May, 1868.

Appendix, No. 4.

APPENDIX,

Expenditure of One Year's Additional Grant.

Account of the Expenditure of One Year's Additional Grant

1. Library of Ancient and Modern Literature and Philology:

	£ s. d.
Ancient Classical Languages and Philology,	21 7 11
English History and Literature,	17 14 7
Foreign Modern Languages,	14 3 9
Works of General Interest, &c.,	77 5 3
	130 11 6

2. Libraries, Museum, &c., Mathematical, Physical, and Chemical Sciences:

Mathematical and Physical Libraries,	14 12 8
Chemical Library,	20 16 1
Museum and Cabinet of Physical Science,	78 18 6
,, Laboratory, Chemical Science,	25 12 4
	139 19 7

No. 3.

Professor in the Queen's College, Belfast, in each Year.

1858-59.		1859-60.		1860-61.		1861-62.		1862-63.		1863-64.		1864-65.		1865-66.		1866-67.		1867-68.	
£	s.	£	s.	£	s.	£	s.	£	s.	£	s.	£	s.	£	s.	£	s.	£	s.
78	0	*93	5	*131	15	*186	0	*187	15	*221	0	233	10	212	0	131	0	121	0
67	0	†90	0	127	15	185	0	105	15	211	0	220	10	202	0	167	0	152	0
69	0	94	15	117	5	155	10	164	5	163	10	162	10	131	10	143	10	130	10
68	10	39	0	58	10	106	5	134	10	173	10	143	0	183	10	184	10	110	10
97	10	139	10	156	0	183	5	211	5	201	0	200	0	173	0	113	0	135	0
66	10	61	5	100	10	178	15	194	10	183	0	186	0	208	0	198	0	192	0
147	5	184	0	157	0	195	15	210	5	213	10	294	10	252	0	277	10	299	0
262	10	307	0	427	10	‡432	10	‡425	10	‡453	10	567	10	544	0	643	14	652	8
105	5	94	10	70	0	96	10	120	5	157	0	170	0	144	0	154	0	165	0
120	0	159	10	277	0	319	5	270	15	231	0	278	0	247	0	268	0	280	0
21	15	24	15	11	10	16	5	20	10	22	0	25	0	24	0	9	0	20	0
28	10	36	10	20	10	25	15	37	10	38	0	51	0	51	0	46	0	37	0
25	0	20	0	28	0	25	0	21	0	10	0	20	0	25	0	23	0	35	0
22	15	24	15	32	0	40	15	70	0	82	0	97	0	79	0	68	0	70	0
31	5	47	0	43	0	§44	0	§36	15	48	0	55	0	48	0	67	0	63	0
37	0	44	0	37	0	61	10	45	0	59	0	74	0	77	0	103	0	103	0
46	0	65	10	79	13	84	12	96	11	73	0	82	0	94	0	137	0	144	0
39	0	50	0	60	0	69	0	70	0	59	0	73	0	83	0	86	0	71	0
28	0	25	0	48	0	63	0	36	0	66	0	36	0	42	0	64	0	72	0
26	0	22	0	–		–		–		–		–		–		–		–	

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* Besides for Sanskrit and Hindustani, 1859-60, £35; 1860-61, £22 10*s.*; 1861-62, £25; 1862-63, £32 10*s.*; 1863-64, £20; 1864-5, £20.

† Besides for Arabic in 1859-60, £5.

‡ The Professor of Anatomy pays to his Demonstrator a portion of the fees for Practical Anatomy.

§ No endowment for Medical Jurisprudence. Professor Hodges delivers the lectures, receiving only class fees.

ALEXANDER DICKEY, *Bursar.*

No. 4.

Appendix, No. 4.

Expenditure of One Year's Additional Grant.

to the Queen's College, Belfast, ending 31st March, 1867.

3. Libraries, Museum, and Collection of Objects of the Department of the Natural Sciences:

	£	s.	d.
Library of Natural History,	35	10	11
,, Geology and Mineralogy,	1	10	0
Museum of Natural History,	41	5	7
,, Geology and Mineralogy,	35	12	6
	113	19	0

4. Libraries, Museums, and Collections of Objects of the Department of Engineering:

Library of Engineering,	19	15	10
Instruments and Collections of Engineering,	9	7	6
	29	4	4

Appendix, No. 4.

Expenditure of One Year's Additional Grant.

APPENDIX, No. 4—*continued.*

ACCOUNT of the EXPENDITURE of ONE YEAR'S ADDITIONAL GRANT to the Queen's College, Belfast, ending 31st March, 1867—*continued.*

	£	s.	d.
5. Museum and Library of Medical Science:			
Library of Medical Works,	44	5	6
Anatomical and Pathological Museums, &c.,	51	7	4
Surgical Museum,	2	10	0
Medical Jurisprudence,	27	10	4
	125	13	2
6. Library of Metaphysical, Legal, and Economical Science:			
Law, Jurisprudence, and Political Economy,	26	8	1
Metaphysics,	25	2	6
	51	10	7
7. Printing, Stationery, Advertising, Postages, Office Expenses, &c.,	294	7	8
8. Heating and Lighting,	157	4	4
9. Grounds,	78	16	9
	1,121	6	11
Balance in Bank of Ireland Office, 31st March, 1867,	360	4	7
Total,	1,481	11	6

	£	s.	d.
Amount of One Year's additional Grant,	1,000	0	0
College and Matriculation Fees,	121	0	0
Received for Calendars and Fines,	9	5	6
Balance in Bank, 31st March, 1866,	351	6	0
Total,	1,481	11	6

The Accounts of the College up to 31st March, 1867, have been examined and found correct by the Commissioners for Auditing the Public Accounts.

May, 1868.

ALEXANDER DICKEY, *Bursar*.

General Class Examinations, Queen's College, Belfast.

—	Session 1866-67.			A.M.	P.M.	Session 1867-68.			A.M.	P.M.
The English Language,	Saturday,	January	12	—	12—4	Saturday,	January	11	—	12—4
Logic,	Saturday,	February	9	9—12	—	Saturday,	February	8	9—12	—
Physical Geography,	Thursday,	February	28	9—12	—	Thursday,	February	27	10—1	—
Mineralogy and Geology,	Thursday,	February	28	—	2—5	Thursday,	February	27	10—1	—
Zoology,	Saturday,	March	2	9—12	—	Saturday,	February	29	10—1	—
Metaphysics,	Tuesday,	April	16	9—12	and 2—5	Tuesday,	April	7	9—12	and 2—5
English Literature,	Thursday,	April	18	9—12	and 2—5	Wednesday,	April	8	9—12	and 2—5
History,	Tuesday,	June	4	9—12	—	Thursday,	April	9	—	2—5
Practical Anatomy,	Saturday,	April	20	9—12	—	Saturday,	April	18	9—12	—
Practice of Medicine,	Friday,	April	26	9—12	—	Monday,	April	27	9—12	—
Midwifery,	Friday,	April	26	—	2—5	Monday,	April	27	—	2—5
Anatomy and Physiology,	Saturday,	April	27	9—12	and 2—5	Tuesday,	April	28	9—12	and 2—5
Materia Medica,	Monday,	April	29	9—12	—	Wednesday,	April	29	9—12	—
Practice of Surgery,	Monday,	April	29	—	2—5	Wednesday,	April	29	—	2—5
Medical Jurisprudence,	Tuesday,	April	30	—	2—5	Thursday,	April	30	9—12	—
Modern Languages,	Tuesday,	May	28	9—12	and 2—5	Tuesday,	June	2	9—12	and 2—5
Greek (First Year),	Wednesday,	May	29	9—12	,, 2—5	Wednesday,	June	3	9—12	,, 2—5
,, (Second Year),	Thursday,	May	30	9—12	,, 2—5	Thursday,	June	4	9—12	,, 2—5
Latin (First Year),	Thursday,	May	30	9—12	,, 2—5	Thursday,	June	4	9—12	,, 2—5
,, (Second Year),	Wednesday,	May	29	9—12	,, 2—5	Wednesday,	June	3	9—12	,, 2—5
Engineering, 1st, 2nd, and 3rd years,	Thursday,	May	30	9—12	,, 2—5	Thursday,	June	4	9—12	,, 2—5
Office and Fieldwork,	Wednesday,	May	29	—	2—5	Wednesday,	June	3	—	2—5
Mathematics,	Friday,	May	31	9—12	,, 2—5	Friday,	June	5	9—12	and 2—5
Natural Philosophy,	Saturday,	June	1	9—12	,, 2—5	Saturday,	June	6	9—12	,, 2—5
Chemistry,	Monday,	June	3	9—12	,, 2—5	Monday,	June	8	9—12	,, 2—5

General Examination of Students in Law, and also of other Students in Political Economy, Botany, and Practical Chemistry at the close of the Lectures on these subjects.

APPENDIX, No. 6.

RETURN of the NUMBER of LECTURES delivered by each Professor in the Queen's College, Belfast, in each YEAR.

—	'49-50	'50-51.	'51-52	'52-53.	'53-54.	'54-55	'55-56	'56-57.	'57-58	'58-59	'59-60.	'60-61.	'61-62.	'62-63	'63-64	'64-65	'65-66.	'66-67.	REMARKS.
Professor of— Greek, . . .	135	232	244	246	236	240	234	235	236	350	500*	460*	440*	360*	360	350	360	360	In addition, examining numerous exercises.
Latin, . . .	162	197	218	221	189	196	233	230	230	275	338	234	234	234	230	324	321	324	Do. do.
History and English Literature, . .	35	55	93	97	104	100	105	105	99	110	123	92	134	146	140	167	167	167	Besides correcting about 700 exercises
Modern Languages,	208	330	324	307	306	305	310	340	360	307	340	372	372	[illegible]	356	356	356	356	
Celtic, . . .	6	6	6	6	6	6	6	6	6	6	6	6	–	–	–	–	–	–	Open to the Public without charge
Mathematics, . .	135	256	333	248	246	320	346	322	330	400	400	370	370	316	325	330	317	317	Besides three hours each week on which the Senior Scholar meets the Junior Division
Natural Philosophy	122	257	255	209	256	250	255	307	300	300	242	242	213	182	180	180	190	190	In addition, arranging apparatus, which occupies as much time as the lectures
Chemistry, . .	134	136	137	129	132	130	138	142	142	140	132	132	132	132	130	130	130	130	In addition, superintending the working pupils, of whom from eight to twelve are admitted each year by examination to the laboratory without charge.
Practical Chemistry	36	35	36	36	36	36	36	36	34	36	36	36	36	36	36	36	55	55	
Natural History, .	120	120	153	157	139	186	142	140	143	140	140	146	140	140	140	140	140	140	Including lectures in Physical Geography, delivered free to all students.

Mineralogy and Geology, . .	Public.	85	54	59	54	55	40	59	52	52	52	52	52	52	52	52	52	52	In addition, daily attendance as Curator in the Museum.
Logic & Metaphysics	–	–	78	142	175	173	164	177	178	167	140	158	194	208	195	195	195	193	In addition, criticising above 600 essays in each session.
Civil Engineering, .	134	138	140	136	140	138	147	218	100	194	196	220	198	328	319	236	247	247	Including practical work under the direction of the Professor.
Agriculture, . .	172	206	205	212	209	213	218	186	190	166*	168	156	156	50	50	50	41	41	Including lectures on Medical Jurisprudence, for which there is no salary
Anatomy and Physiology, . .	115	116	118	115	114	115	117	115	115	118	115	112	108	108	224	261	260	260	In addition, daily practical teaching in the dissecting-room for three hours by the Professor, and four hours by his assistant.
Practice of Medicine,	93	93	92	92	93	94	94	85	75	85	95	95	98	98	95	95	95	95	
Practice of Surgery,	93	94	93	91	91	93	94	94	84	84	94	94	94	93	93	93	93	93	Besides about twenty-five lectures each session on Operative Surgery.
Materia Medica, .	92	91	91	93	90	90	82	80	84	84	84	84	84	84	84	84	81	84	
Midwifery, . .	92	92	92	91	90	93	96	93	93	95	90	80	80	78	78	76	76	78	Besides practical instruction to students which may be required at any hour throughout the year.
English Law, .	24	48	72	96	96	96	96	96	96	96	72	72	96	96	96	96	96	96	No third year Class in 1859-60, or fourth year Class in 1860-61.
Jurisprudence & Political Economy.	24	48	96	120	120	120	120	120	120	96	120	120	120	120	120	120	120	120	

The above Return gives the number of Meetings of one hour each, in each Class. The system of instruction includes, not merely formal Lectures, but also examination in the business of the course; in some classes these examinations are held daily; in others on fixed days of the week, according to the nature of the subject.
The Professors also conduct the General Scholarship Examinations; and some of them, in addition the Matriculation and Supplemental Examinations.

* Including about 110 on Sanskrit and Hindustani.

Lectures delivered by Professors.

OCTOBER EXAMINATIONS of Queen's College, Belfast, 1868.

Days.	Hours.	First Year Students.	Second Year Students.	Third Year Students.	Fourth Year Students.
Tuesday, Oct. 15.	9—12		Suppl. Ex. { English. Mod. Lang. Math.	Suppl. Ex.—Mod. Lang., Math., Nat. Phil., Chem	Senior Schol.—Latin.
	2—5		Suppl. Ex.—Greek, Latin.	Suppl Ex.—Greek, Latin, Logic.	Senior Schol.—Latin.
Wednesday, Oct. 16.	9—12		Liter. Schol.—Greek.		Senior Schol.—Greek
	2—5		Liter. Schol.—Greek.		Senior Schol.—Greek.
Thursday, Oct. 17.	9—12		Med. Engin. } Schol.—Chem.	Previous Examination, in Arts and Engineering, of Queen's University.	Senior Schol.—Chem.
	2—5	Matric.—Math.	Med. Engin. } Schol.—Chem.		Senior Schol.—Chem.
Friday, Oct. 18.	9—12	Matric.—Greek, Latin			
	2—5				
Saturday, Oct. 19.	9—12	Matric.—English, *in Arts only.*			Senior Schol.—Mod. Hist.
	2—5	Matric.—English, *in Medicine, &c.*			Senior Schol.—Mod. Hist.

Monday, Oct. 21.	9—12		Med. Schol.—Botany.	Engin Schol. { Geol. and Phys. Geog.	Senior Schol.—Nat. Hist.
	2—5	Lists of Matriculated Students to be made out.	Med Schol.—Zoology. Liter Schol.—English.		Senior Schol.—Nat. Hist.
Tuesday, Oct. 22.	9—12	Science Med. Engin. } Schol.—Math.	Science Engin. } Schol.—Math.	Engin. Schol.—Math.	Senior Schol.—Math.
	2—5	Science Med. Engin } Schol.—Math.	Science Engin. } Schol —Math. Med. Schol.—Anat. and Phys.	Engin. Schol.—Math. Med. Schol.—Anat. and Phys.	Senior Schol.—Math. Med. Schol.—Prac. of Midw.
Wednesday, Oct. 23.	9—12			Med. Schol.—Prac. Chem.	Senior Schol.—Nat. Phil. Med. Schol.—Prac. of Med.
	2—5	Liter. Med. } Schol.—English.	Engin Schol.—Exp Phys.	Engin. Schol.—Nat. Phil.	Senior Schol.—Nat. Phil.
Thursday, Oct. 24.	9—12	Liter. Med. } Schol.—Latin.	Liter Schol.—Latin. Engin Schol.—Geo. Draw.	Engin. Schol.—C. Engin. Med. Schol.—Mat. Med.	Med. Schol —Med. Jur. Senior Schol.—Pol. Econ.
	2—5	Liter Med. } Schol.—Latin.	Liter. Schol.—Latin. Engin. Schol.—Geo. Draw	Engin Schol.—C. Engin.	Senior Schol.—Pol. Econ. Med. Schol.—Surg. Anat.
Friday, Oct. 25.	9—12	Liter. Med. } Schol.—Greek.	Liter. Schol.—Mod. Lang.		Senior Schol.—Mod. Lang. Senior Schol.—Metaph. Med. Schol.—Anatomy.
	2—5	Liter Med. } Schol.—Greek.	Liter Schol.—Mod. Lang.		Senior Schol.—Mod. Lang. Senior Schol —Metaph. Med. Schol.—Physiology.

Students passing the Supplementary Examinations complete the previous year, and take rank accordingly.

Hours of Lectures,—Session 1867–68.

Hours.	Arts.			Civil Engineering			Medicine.
	1st Year.	2nd Year	3rd Year	1st Year	2nd Year.	3rd Year	
9 till 10	*French.* Monday Wednesday Thursday *German.* Tuesday Friday	*Mathematics* Monday Tuesday Wednesday Thursday Friday		*French.* Monday Wednesday Thursday *German.* Tuesday Friday	*Mathematics.* Monday Tuesday Wednesday Thursday Friday		
10 till 11	*Mathematics* Monday Tuesday Wednesday Thursday Friday	*French.* Monday Wednesday Thursday *German.* Tuesday Friday	*Honor Classes.*	*Mathematics.* Monday Tuesday Wednesday Thursday Friday			
11 till 12	*Latin.* Monday Wednesday Friday	*Nat. Philos.* *Exp. Phys.* Monday Wednesday Friday *Nat Phys* Tuesday Thursday	*Eng Lit.* Monday Wednesday Friday *History* Tuesday Thursday	*Exp. Phys* Monday Wednesday Friday *Geom.* *Drawing.* Tuesday Thursday	*Mineralogy and Geology* Monday Wednesday Friday *Nat Phys* Tuesday Thursday	*Office and Field Work.* Tuesday Thursday	*Exp Phys* 3 months. Monday Wednesday Friday *Prac. Chem.* [*see below* Summer Medical Classes]
12 till 1	*Greek.* Monday Thursday Friday	*Latin.* Monday Wednesday Friday	*Metaphysics* Tuesday Wednesday Thursday Friday *History.* Monday	*Geom. Drawing, and Office Work.* Tuesday Thursday	*Office and Field Work.* Tuesday Thursday	*Office and Field Work.* Tuesday Thursday	*Anatomical Demonstrations.* Monday Tuesday Wednesday Thursday Friday

1 till 2		*Greek.* Monday Thursday Friday	*Zool to Mar* 1. Monday Tuesday Wednesday Friday *Bot from May* 1. Monday Tuesday Wednesday Thursday Friday		*Civil Eng.* Monday Wednesday	*Nat. Philos. applied.* Tuesday Thursday	*Zool. to Mar* 1. Monday Tuesday Wednesday Friday	*Bot from May* 1. Monday Tuesday Wednesday Thursday Friday	*Surgery* Monday Tuesday Wednesday Thursday	*Med. Juris.* Friday
2 till 3	*English.* Monday Tuesday Wednesday Friday	*Logic.* Tuesday Wednesday Thursday Friday	*Pol. Economy* Tuesday Thursday Friday			*Civil and Mech Eng* Monday Wednesday			*Anatomy* Monday Tuesday Wednesday Thursday Friday	Examination on Fridays at 4 o'clock.
3 till 4			*Chemistry* Monday Tuesday Wednesday Thursday Friday	*Chemistry.* Monday Tuesday Wednesday Thursday Friday	Field Work and Engineering Excursions and additional Lectures for 2nd and 3rd Year Students occasionally on Fridays and Saturdays for some hours.			*Chemistry.* Mon Tues. Wed Thur Fri. *after May* 1, *from* 2 *till* 4.	*Midwifery.* Monday Tuesday Thursday	*Medical Jurisprud* Wednesday
4 till 5			Chemical Laboratory open from 9, A.M., till 3, P.M.					*French.* Monday Thursday or from 9-10, A.M.	*Materia Med.* Monday Tuesday Wednesday Thursday	*Prac. Med.* Monday Tuesday Wednesday Thursday

SUMMER MEDICAL CLASSES, COMMENCING MAY 1, 1867.

Practical Chemistry, ...	Monday, Tuesday, Wednesday, Thursday, Friday, from 11 A.M.
Botany, ...	Monday, Tuesday, Wednesday, Thursday, Friday, 1 P.M.
Experimental Physics, ...	Monday, Wednesday, Friday, 2 o'clock, Tuesday, Thursday, 11 A.M.

FACULTY OF LAW.—HOURS OF LECTURES.

1st Year.				2nd Year.				3rd Year.		4th Year.					
8 o'clock, P.M.	*Law of Property.* Monday Wednesday Friday	7 o'clock, P.M.	*Jurisprudence.* Monday Wednesday Friday	7 o'clock, P.M.	*Equity and Bankruptcy* Monday Wednesday Friday	8 o'clock, P.M.	*Civil Law.* Monday Wednesday Friday	11 o'clock, A.M.	*Common and Criminal Law.* Tuesday Thursday Saturday	10 o'clock, A.M.	*Evidence and Pleading* Tuesday Thursday Saturday	6 o'clock, P.M.	*Constitutional & Colonial Law* Monday Wednesday Friday	1.30 o'clock, P.M.	*Medical Jurisprudence* Wednesday, 8 o'clock Friday, 1 o'

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Appendix, No. 7.

AN ENLARGED DIGEST OF SUBJECTS and COURSES pursued in Queen's College, Belfast.

Digest of Subjects and Courses.

GREEK—*Professor, Charles MacDouall*, LL.D., M.R.A.S.

In the Greek Class, as in all those which are attended during more than one session, the business, as well as the hours assigned to the Students of the different years, is necessarily different; but it is always distributed into three simultaneous processes, viz., public examinations, lectures more or less formal, and exercises written at home and commented on in the class.

In the first session, the complex and self-contained structure of the Greek language is subjected to a close analysis; carried out, on the one hand, by tracing words to their crude forms, by classifying terminations, both the primary and the flexional, and by discriminating among analogically correct forms those actually used in different ages and dialects; on the other hand, by exhibiting the methods by which words are combined in simple clauses, clauses are knit into sentences, and sentences compose periods less or more complicated. Some prose-work furnishes the materials for this analysis; while the Students read and translate it, or else re-translate off-hand passages read out in English before them by the Professor. Besides syntactical phænomena, the laws and characteristics of both epic and dramatic versification are expounded and exemplified, while a portion of the *Ilias* and some tragedy are used as text-books.

In the second session, while consecutive passages of Herodotus along with some Attic oration or philosophical treatise, and a portion of the *Odysseia* along with some Attic tragedy or comedy, form the basis of prelections, the previous discipline is continued and extended; the distinctions of dialect and style are more fully elucidated; the origin, growth, and fortunes of the epos, the drama, history, and other departments of literature, are more distinctly unfolded; discussions on points of mythology, geography, chronology, archæology, æsthetics, &c., are more freely introduced and more amply treated. The Students are required to turn Herodotean Greek, at sight, into Attic, altering both the forms of words and the structure of sentences; to re-translate passages into Greek prose and verse; and also to give in original essays in both forms of composition.

Considering the variety of subjects which enter simultaneously into the first and second Sessions of the Collegiate Course, the Students generally appear to give a fair share of their attention to the Greek Language and Literature. Several times in the week a considerable number voluntarily attend extra Lectures, at which no note is taken of their presence or of their absence.

In a distinct or higher class, advanced Students, generally in the third or fourth year of their Course, are exercised in the study of more difficult works than those previously read, in the higher problems of criticism and philology, and especially in composing both prose and verse.

The following Text-books have been used in the successive Sessions of College from 1849–50 to 1865–66:—*The Ilias*—all the Books except I., II., IV., V., VII., VIII.; *the Odysseia*, Books I. to XIV. (inclusive); Hesiodus, *Theogonia*; Pindarus, *Olympia, Pythia, Nemea;* Aeschylus, all the Tragedies except the *Supplices;* Sophocles, the seven Tragedies; Euripides, *Alcestis, Hippolytus, Hecabe, Phoenissae, Orestes, Helene, Hercules Furens, Bacchae, Ion, Rhesus, Troades, Andromache, Iphigeneia in Aulide, Iphigeneia in Tauris;* Aristophanes, *Nubes, Aves, Ranae;* Herodotus, Books I., II., III., IV., VII.; Thucydides, Books I., II.; Xenophon, Portions of *Anabasis* and *Cyropaedeia;* Platon, *Apologia Socratis, Gorgias, Phaedon, Phaedrus, Philebus, Protagoras, Theaetetus, Timaeus*, and Books I., VII., and X. of *Respublica;* Aristoteles, *Poetica* and portions of *Rhetorica;* Demosthenes, *c. Meidiam* and *de Corona;* Aeschines, *in Ctesiphontem.*

The SANSKRIT and HINDUSTANI CLASSES, conducted during six Sessions by the Professor of Greek, have been discontinued.

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Digest of Subjects and Courses.

LATIN—*Professor, William Nesbitt,* M.A.

The Professor of Latin lectures Students of the First and Second Years each set three hours a week; attendance on the lectures being compulsory for those who take the Classes of Latin. Besides these compulsory lectures, he gives two lectures additional to Students of each of these years, attendance on which is voluntary, in which more difficult authors are read, and special attention is paid to composition. The attendance on these lectures is very good.

An honour Class has been formed of Students of the Third and Fourth Years, chiefly attended by those who are anxious to distinguish themselves in Ancient Classics at the Degree Examination.

In addition to the above, two lectures are delivered weekly on Latin composition.

The number of hours during which the Professor lectures each week is fourteen.

HISTORY AND ENGLISH LITERATURE—*Professor, Charles Duke Yonge,* A.B. Oxon.

Class of the English Language.

The business of this Class is conducted by—

A Course of Lectures on the Origin, Formation, Inflections, and Grammar of the English Language, for which Dr. Latham's "English Language" forms in some degree the text-book;

With occasional Lectures on the rules and principles of Prose Composition, and Weekly Essays.

Class of English Literature.

The business of this Class is conducted by—

A Course of Lectures on English Literature in general, and particularly on the lives, works, and styles of the best authors in each department;

With Special Lectures also on the works appointed as the subjects for the Dublin Autumnal Examination of the ensuing year, with and without Honors;

And Fortnightly Essays.

Class of History.

The business of this class is conducted by—

Lectures on History in general;

Lectures on English History, embracing rather the larger half of the entire course;

A subsequent course on the History or that portion of the History of any other country which is selected as a subject for the Dublin Autumnal Examination of the ensuing year.

MODERN LANGUAGES—*Professor, Albert Ludwig Meissner,* PH.D.

The instruction in Modern Continental Languages embraces three courses each for French and German, extending over three terms, and a course of Italian during the first term, attendance on which is voluntary.

No entrance examination is as yet held in Modern Languages, in consequence of which the insufficiency of intermediate teaching is more apparent in this department than perhaps in any other.

Students in Arts and Medicine, and in the department of Engineering, are required to attend lectures on one Modern Language for one session. The majority select for this purpose the French language; several, however, attend both French and German. For Students in Arts of the second and higher years, Modern Languages form one in a group of four subjects, out of which they select two.

The work of the classes, especially during the first two years, is carried on to a great extent by means of *vivâ voce* questions and answers. Frequent oral examinations are held, and at each meeting of the classes a passage is translated from English into French or German.

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Digest of Subjects and Courses.

In the First Session the Grammar is explained, and select passages are translated from French and German Classics.

In the Second Session a more extended course of the Grammar is gone through, and the Students are made acquainted with the principal authors of French and German Literature.

The first term of the Third Session is devoted to a repetition of the two preceding courses, together with Examinations on the History of French and German Literature. The Text-books are Géruzey and Demogeot for French, and Weber and Vilmar for German. The questions and answers are given and returned in French and German respectively.

In the second term of the Third Session the Professor delivers Lectures in French and German on those periods of Literature with which the Students have already become somewhat familiarized by their previous studies.

In the third term of the Third Session the work of the second is continued, and occasional Lectures are delivered on the principles of Comparative Grammar.

Medical Students unable to attend the classes in Arts, are instructed in a separate class.

About six per cent. of the Students attending Lectures on Modern Languages are Non-Matriculated.

MATHEMATICS—*Professor, John Purser*, M.A.

Attendance on this Class is prescribed to all Students in the Faculty of Arts during the first year of their Course; during the second year Mathematics forms one of four Courses, out of which the Students select two.

All Students in the Department of Engineering are required to attend the Mathematical Classes during two years.

Before entering, Students are required to pass an examination in the First and Second Books of Euclid, and in a small portion of Algebra. Practically they come fairly prepared in the prescribed portions of Euclid, but a large proportion can hardly be said to possess even an elementary knowledge of Algebra. A considerable number of the Students are Candidates for Mathematical Scholarships at entrance, and these are generally well prepared in the first six Books of Euclid, and a considerable portion of Algebra and Plane Trigonometry.

On this account the instruction of the First Year in Mathematics has been given in two Divisions. The Lower Division has been carefully taken through such portions of Euclid I., II., III., IV., VI., as they had not previously prepared, and has received instructions in Algebra as far as the progressions, and in Plane Trigonometry as far as the solution of triangles, with the use of logarithms and trigonometrical tables. The instruction of the Upper Division comprises a complete Course of Algebra and Trigonometry, with the principal historical properties of the Conic Sections, treated geometrically.

The Council has sanctioned the employment of the Senior Mathematical Scholar in giving a portion of the instruction of the Lower Division. This arrangement, while it affords a greater number of hours to the Lower Division, enables the Professor of Mathematics to give more attention to the Upper Division, and has been found to work very satisfactorily.

In the Second Year the subjects of Lecture are Analytical Geometry, the Differential and Integral Calculus, and the first three sections of the Principia of Newton; and, in addition to this, when the progress of the Students has been sufficiently rapid during the early part of the Session, The Theory of Equations, and the solution of the simpler kinds of Differential Equations.

For several years past a third and higher class has been formed for the benefit of the Students competing for University honors and the Indian Civil Service Examinations. The subjects of lecture are Geometry of three dimensions, Differential Equations, and other branches of the higher Mathematics, according to the advance which the Students have made.

NATURAL PHILOSOPHY—*Professor, Joseph David Everett*, M.A., D.C.L.

The Classes in this Department are arranged under the three heads of Experimental Physics, Mathematical Physics, and Natural Philosophy Applied.

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All Students in the Faculty of Arts in their Second Year attend the Classes of Experimental and Mathematical Physics. Engineering Students attend the Class of Experimental Physics in their First Year, the Class of Mathematical Physics in their Second Year, and the Class of Natural Philosophy Applied in their Third year. Medical Students attend the Class of Experimental Physics only.

In all these Classes the teaching is by prelection interspersed with oral examination.

The subjects treated under the head of Experimental Physics include—Properties of Matter, Mechanical Powers, the Elements of Hydrostatics and Hydraulics, Heat, Light, Sound, Electricity, and Magnetism; the leading principles in these several departments being broadly laid down and copiously illustrated by experiments.

The Course of Mathematical Physics includes a rigorous demonstration of the principal theorems in Statics and Kinetics, an explanation of the leading principles of Astronomy, Geometrical Optics, and the Mathematical treatment of numerous questions connected with the subjects of the Experimental course.

In the Class of Natural Philosophy Applied, the subjects include a more advanced course of Statics, Kinetics, and Hydrostatics, involving application of the Differential and Integral Calculus, and illustrated by practical examples, Kinematics, including the principles of Mechanism, the relations of Stresses and Strains, Moduli of Elasticity and Rigidity, Work Done, Kinetic and Potential Energy, Elements of Thermodynamics.

In addition to the above-named Classes, there is an Honor Class, attended by Senior Students, in which the subjects prescribed for University Honors are studied.

CHEMISTRY—*Professor, Thomas Andrews,* M.D., F.R.S., M.R.I.A.

In the Class of Chemistry the greater part of the Course is devoted to pure Chemistry; but the Elements of the Sciences of Heat and Electricity, particularly in their relations with Chemistry Proper, are also taught. The application of these sciences to the arts are particularly referred to; and it has been the constant endeavour of the Professor to communicate to the Students as precise and accurate information as possible on the subjects treated in his Lectures, and to train them to habits of careful observation and accurate thinking. With this view a weekly examination of the whole Class is held, at which the Students are subjected to a searching examination on the business of the preceding week; and further to encourage a taste for scientific inquiry, and also to train a certain number of practical chemists, a limited number of the Students are admitted, by examination, as working pupils into the chemical laboratory, where they have an opportunity of acquiring a knowledge of chemical analysis. This latter arrangement has now been in practice for several years, and has been attended with the best results.

NATURAL HISTORY—*Professor, Wyville Thomson,* LL.D.

The Zoological Department of the Course occupies the First Term and greater part of the Second, and comprehends the Outlines of Anatomy and Physiology of animals, followed by Systematic Zoology, and remarks on the distribution of animals.

The Botanical part comprehends Vegetable Anatomy and Physiology, Systematic Botany, and distribution of vegetable forms. In addition to the Class Lectures, meetings are held in the Botanic Garden, and practical excursions made into the neighbouring country.

This Course comprehends chiefly Lectures on the structure and form of continents and islands; the distribution of mountain systems, rivers, and lakes; the ocean, its currents, temperature, &c.; the atmosphere, its currents, &c.; rain, snow, &c. The preceding subjects are considered in relation to the geographical distribution of animals and plants.

These different branches are illustrated by specimens, or drawings, or both, as the case may be.

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GEOLOGY AND MINERALOGY—*Professor, Wyville Thomson*, LL.D.

The Courses consist of lectures, demonstrations, and examinations. The Geological Course embraces the general principles of the science, and a detailed investigation of the palæontological, lithological, and economic characters of all the formations. The Students are exercised in the practical use of the necessary instruments, and in the construction of Geological maps and working sections. The characteristic fossils of the different formations are rendered familiar by the exhibition of specimens and models, and an excellent series of drawings. Drawings are also used for the illustration of the underground workings of mines of copper, coal, &c.

In the Mineralogical Course the Students are instructed in the most modern crystallography by models, and exercised with the reflecting goniometer. The electro-chemical classification of minerals is then explained, and an extensive suite of minerals in the Museum is arranged on that system, for the instruction of the Students.

Once a week examinations are held, and additional explanations given of the subjects of the preceding lectures.

LOGIC AND METAPHYSICS—*Professor, Rev. James M'Cosh*, LL.D.

LOGIC.

Students attend this Class four days each week during twelve weeks of the Second Session. On two of these days there are examinations on a text-book of Formal Logic, with short prelections on the said text-book, and also the oral explanation of philosophic terms, the reading of Essays by the Students, and the criticism of them by the Professor. On the other two days the Professor delivers written Lectures. This Course of Lectures is divided into two parts: FIRST, GENERAL LOGIC, or an Exposition of the Laws of Discursive Thought in general, that is, whatever be the object of thought, embracing Notions, Judgment, and Reasoning; SECONDLY, PARTICULAR LOGIC, or the Development of the Laws of Thought, as directed to particular classes of objects, comprising Demonstrative Evidence, Probable Evidence, Induction, Analogy, Teleology, and the Relation of the Organon of Bacon to that of Aristotle. The prominent topic in the second part is the Method of Induction, which is treated under the heads:—I. The Means, being generally Systematic Observation, and more particularly Analysis, Observation Proper, Experiment, Hypothesis, Explication of the Coaception. II. The End, being the Discovery of Classes (as in Natural History, &c.), of Composition (as in Chemistry, &c.), or Causes (as in Natural Philosophy, &c.). III. The Canons of Classes, Composition, and Causes by which we may reach the End by the Means. The Students are required to give in a short written essay once a fortnight. At the Pass Examination, at the close, about one-half of the questions bear upon subjects discussed in the text-book, and the other half upon topics explained in the lectures.

METAPHYSICS.

This Class meets four days each week, and an hour each day, during the first two terms of the Session, and is attended by Students of the Third Year. On one of these days there is a rigid examination, with interspersed remarks by the Professor, on the second half of the Epitome of the History of Philosophy, sanctioned by the University of France (translated by Henry). In this part of the text-book there is an abstract of the doctrines of the more eminent philosophers who have flourished in this country, and on the Continent of Europe, from the time of Bacon to the present day. On another of these days there is an examination on the written lectures, together with the reading and criticism of essays; the Students being required to give in a carefully written essay every fortnight to the Professor, who reads it at home, and selects certain portions of it to be

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read in the class, where he criticises it. These essays are on the leading subjects discussed in the written lectures. On the other two days the Professor delivers carefully prepared written lectures. He begins the course with a few lectures on the Method of Investigation, which is that of Induction, and on Mind and Body, and then proceeds to divide his course into two parts, PSYCHOLOGY and METAPHYSICS PROPER.

Under PSYCHOLOGY he treats of the Powers or Faculties of the Mind which he classifies as follows:—I. The Simple Cognitive Faculties: (*a*) Perception; (*b*) Consciousness. II. The Reproductive Faculties: (*a*) Retention; (*b*) Phantasy; (*c*) Association; (*d*) Recognition; (*e*) Composition; (*f*) Symbolic Power. III. The Faculties which Discover Relations: (*a*) of Identity and Difference; (*b*) of Whole and Parts (to which we owe abstractions); (*c*) of Space; (*d*) of Time; (*e*) of Quantity; (*f*) of Resemblance (to which we owe the Discovery of Classes); (*g*) of Active Property; and (*h*) of Cause and Effect. IV. The Conscience. V. The Emotions; and VI. The Will. In this course of lectures, which occupies two-thirds of the session, the method of operation and peculiarities of these mental attributes are carefully pointed out.

Under METAPHYSICS PROPER the Professor treats of the Native or Intuitive Principles of the Mind. He points out their true Psychological Nature, and shows that they are the fundamental laws or rules of the Faculties. He also specifies the tests, such as Self-evidence, Necessity, and Universality, by which they may be distinguished. He proves that they are in the constitution of the mind, and that they operate spontaneously, but that we can make a reflective or philosophic use of them only after we have detected their nature by a careful induction. He classifies them as the True and the Morally Good. Under the first he treats (1) of Primitive Cognitions and Beliefs, such as Body, Spirit, Substance, Power, Space, Time, the Infinite; and (2) Primitive Judgment, such as Substance and Quality, Mathematical Axioms, Cause and Effect. Under the Good, without entering into the subject of Ethics, he shows that there is a fundamental distinction between Moral Good and Evil. He closes this course by showing how all these principles should conduct us to the belief in a Being who is at one and the same time the True and the Good.

HONOR LOGIC.

The Professor has also an Honor Class, in which are discussed the higher questions of Logic (Formal and Inductive) and Philosophy. It meets three times a week, and is attended by twenty-two Students. At two of the hours the Professor lectures on Logic and the History of Philosophy, and at the third hour there are examinations on text-books (including logical treatises by Mansel, Thomson, and Mill), and discussions.

CIVIL ENGINEERING—*Professor, James Thomson*, M.A., C.E.

The Courses of lectures and practical instruction given by the Professor of Civil Engineering are arranged to accord with the Ordinances of the Queen's University, which prescribe to candidates for the Diploma in Civil Engineering a Curriculum extending over three Sessions usually, but admitting of abbreviation to two Sessions in the case of students whose previous acquaintance with a sufficient group of the subjects prescribed for study in the first and second Sessions of the ordinary Course shall be deemed by the College Council satisfactory.

For the First Year Students the Professor gives a course of instruction, comprising lectures and oral examinations on the Principles of Geometrical Drawing, and the performance by the students of practical work under his direction. The lectures include the principles of descriptive geometry, orthographic and isometric projection, and linear perspective; and the practical work comprises the performance of examples in these subjects, and the execution of drawings in Mechanical Engineering, and occasionally also in Architecture and Civil Engineering. The Class meets for two hours at a time on two days per week during the three Terms of the College Session.

For the Second Year Students two courses are conducted by the Professor of Engineering, of which one is a Lecture Course and the other a Practice Course. The Lecture Course comprises surveying, levelling, and plotting, with the theory

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and use of the instruments required in surveying and levelling operations; mensuration of earthworks for railways; setting out works on the ground, including ranging of railway curves, and setting out breadths of cuttings and embankments, and ranging tunnels, &c. The Course also comprises usually some of the following subjects:—revision and farther prosecution of descriptive geometry, and perspective, and other subjects of geometrical drawing; designing and drawing of oblique bridges; properties and qualities of materials used in construction, and modes of procuring them; and an introduction to architecture as a fine art.

In the Practice Course of the Second Year the Students are engaged in the performance of office and field work, under the instruction and direction of the Professor; and the business includes surveying, levelling, drawing, mapping, and the computation of areas of lands, and other engineering calculations. Excursions are also made occasionally during the Session to visit Engineering works.

For the Third Year Students there are (as for those of the Second Year), two Courses conducted by the Professor, one a Lecture Course, and the other a Practice Course. The Lecture Course comprises the farther treatment of some of the subjects proposed to be entered on in the Second Year, and most of the following subjects:—foundations, cofferdams, bridges, tunnels, roads, and railways; specifications for engineering contracts; water-works for supplying towns; science of the flow of water in orifices, pipes, and canals; drainage of fens by gravitation, and by steam power and other mechanical means; harbours; regulation and improvement of rivers; science of the strength of materials and structures; ventilation of dwelling-houses, public buildings, and mines; the iron manufacture; processes and mechanisms used in foundries and engineering workshops.

The Practice Course includes office work, field work, and engineering excursions.

ANATOMY AND PHYSIOLOGY.—*Professor, Peter Redfern,* M.D. Lond., F.R.C.S.

The Department of Anatomy and Physiology comprises two distinct Courses of Lectures—one on Anatomy and Physiology, the other on Descriptive and Surgical Anatomy, and also the teaching of Anatomy by Dissections throughout the day.

The Course of Anatomy and Physiology includes about 144 meetings, each of an hour's duration, held on the first five days of each week from November to April inclusive. These meetings are for lecture and occasional examinations on the subjects previously considered in the lectures. The lectures include a complete course of the Anatomy and Physiology of the general textures of the body, including the blood, chyle, &c., and a systematic account of the whole of the viscera, treated of as they are associated in groups for the several purposes of digestion, circulation, respiration, urination, innervation, and generation; also the organs of sense. In treating of every part or organ its healthy state is shown by recent dissections and by preparations from the Museum illustrating it in man and animals, its diseased states and actions being referred to at the same time and contrasted with the healthy ones. The textures not visible to the naked eye are shown under a series of achromatic microscopes, so that during the Course every student in the class has an opportunity of judging for himself of the true characters of each part, and, by becoming familiarized with these, of recognising each when changed by disease.

The Course of Practical Anatomy and Anatomical Demonstrations includes:—

1st. Dissections carried on throughout the day under the immediate superintendence of the Professor of Anatomy and Physiology, and the Demonstrator. Each Student is required to be steadily engaged in dissections during the whole Session. For this purpose the supply of subjects is regular and abundant, and thus affords the surest foundation for efficient medical teaching.

2nd. This Course includes the Anatomical Demonstrations, which consist of a complete Course of Descriptive and Surgical Anatomy, commencing with the anatomy of the skeleton and bones, and including the anatomy of the limbs and other parts, excluding that of the viscera and the physiology treated of in the Course of Anatomy and Physiology. The demonstrations are given on each of the first five days of the week, and are about 117 in number in each Session.

Digest of Subjects and Courses.

PRACTICE OF MEDICINE—*Professor, James Cuming*, M.D.

The class meets four times each week, from the first week of November to the last of the following April.

An examination is held usually once a fortnight. The Course embraces the principles of Inflammation, Fevers, the diseases, organic and functional, of the viscera of the three great cavities of the human body. In treating of individual diseases, their pathology, semeiology, ætiology, and treatment, are the subjects chiefly dwelt on. Wherever it is possible, pathology is illustrated by the preparations afforded by our Museum, by drawings and plates, or by recent specimens. It may be added that the Professor's present connexion with the Belfast General Hospital adds greatly to the means of making his Course more useful and interesting to students.

THEORY AND PRACTICE OF SURGERY—*Professor, Alexander Gordon*, M.D.

Four Lectures are delivered weekly during the Medical Session. An examination is held each day on the subject of the preceding day's Lecture. Each Course comprises the following subjects:—

Inflammation,
Suppuration,
Mortification,
Erysipelas,
Burns,
Ulcers,
Wounds,
Hæmorrhage,
Diseases of the Arteries,
,, Veins,
Fractures of Trunk and Extremities,
,, Cranium, Injuries of the Brain and Scalp,
Dislocations,
Diseases of the Joints,
Diseases of the Bursæ,
,, Bone, benign and malignant,
,, the Jaws and Mouth,
,, the Fingers and Toes,
,, Female Breast,
,, Anus and Rectum,
,, Testis,
,, Hernia,
,, Prostate,
,, Bladder,
,, Eyes,
,, Larynx,
Syphilis,
Gonorrhœa,
Stricture.

All the capital and minor operations are performed on the dead subject. The Professor delivers a separate Course of twenty-five Lectures on Operative Surgery.

MATERIA MEDICA—*Professor, James Seaton Reid*, M.D.

This Course includes—

1st. General Pharmacology, or the modes in which medicines act upon the living organism in a state of health.

2nd. Therapeutics, or the modes in which medicines act as curative agents.

3rd. Pharmacy.

4th. Dietetics, a review of the different kinds of food used in health and in disease.

5th. Special Pharmacology, or the history, composition, uses, and modes of administering medicinal agents for the cure of disease.

The Class meets four times each week. An examination is held once every week.

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Digest of Subjects and Courses.

Midwifery—*Professor, Richard F. Dill*, M.D.

Lectures four times a week during the six winter months consist of following subjects :—

Anatomy of the pelvis, so much as is required for midwifery. Its measurement and pelvimeters.

Contents of the pelvis. The functions of the uterus in its virgin state.

Conception—length of gestation—changes of the uterus and its appendages during gestation.

Growth of child from its earliest seen form until its full parasitic size.

Graafian vesicle and corpus luteum. Fœtus, its circulation, signs of maturity, weight, and length.

Plural births.

Proportion of births and deaths of males to females.

Superfœtation.

Signs of pregnancy.

Signs of approaching labour.

Natural labour, its progress; also the positions and progress of child till its separation from its mother.

Management of natural labour, including the arrangement of the bed and bed-room, and the proper dress and posture of the patient.

Tedious labour, its causes and treatment.

Labour requiring the use of instruments; their application taught on models in the class.

Cæsarean section and Sequltean operation—how to prevent the fœtus from getting large in uterus.

Premature labour—how to bring it on, and when it is necessary to do so.

Cross-births and their treatment.

Abortion—how to prevent it.

Extra uterine fœtations—how they occur, and their treatment.

Management of women after delivery, and treatment of such accidents and diseases as occur at this period.

Management of children after birth, washing, dressing, food, &c., and the choice of a wet-nurse, and treatment of such accidents as take place at this period, or soon after.

Practical midwifery taught by pupils attending patients in their own houses and in the Lying-in hospital, where Clinical Lectures are given.

Medical Jurisprudence—*Professor, Dr. Hodges.*

The Lectures in this Course are delivered twice weekly during six months. They include an account of the history and chemical investigation of poisons, and of the various subjects respecting which the evidence and assistance of Medical Practitioners may be required in Courts of Law. Experimental illustrations of the methods to be pursued in medico-legal inquiries are given, and frequent examinations held to test the progress of Students. No salary has been allocated to the Teacher of this department, and the duties, at the request of the Council, have, since the opening of the College, been performed by Dr. Hodges.

English Law—*Professor, Echlin Molyneux*, Q.C.

The Professor of English Law, in conducting his department, has constantly kept in view the object of the Select Committee of the House of Commons in recommending the foundation of Chairs in Law in connexion with the Queen's Colleges, which, as they stated in their Report on Legal Education, was not merely to prepare Candidates for the Bar, and for the profession of Attorney and Solicitor, but to raise the standard of legal attainments amongst local practitioners, and especially to provide opportunities of legal education to qualify persons intended to fill administrative situations not strictly legal—a policy which has

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been since followed up by the Legislature conferring privileges, by way of inducement, on Candidates for the profession of Attorney and Solicitor, who shall avail themselves of these Schools of Law.

Digest of Subjects and Courses.

The Course of the *First* year in this department comprehends the elements of real and personal property, with the principles of conveyancing; that of the *Second* consists of an introduction to the principles and practice of Courts of Equity and the law of Bankruptcy; the *Third* Course includes the common law as incident to contracts, the nature and form of remedies by civil action, and an outline of criminal law, theoretical and administrative, which last completes the Curriculum of instruction required for the attainment of the Diploma of Elementary Law in the Queen's University. The subjects prescribed for Students of the *Fourth* year to qualify them for the Degree of LL.B. embrace a more extended and detailed course of the subjects already enumerated, including the law of wills, powers, evidence, and procedure.

The Lectures are made auxiliary to the cotemporaneous studies directed, and are accompanied by interrogation, independent of the General Examination and that for Honors. Such books, cases, and decisions, and portions of treatises are pointed out for reading as are considered by the Professor most useful in elucidating a branch of learning which is scarcely furnished with books exclusively intended for instruction; and no efforts have been spared to point out the peculiarities of the law in Ireland, whether proceeding from statutes or inherent diversity of practice, or to direct attention to the recent changes which have been introduced into the course of procedure.

From the first opening of the College to the present time the successive classes have spontaneously applied themselves with assiduity and perseverance to the various subjects of legal instruction, and several Non-Matriculated Students have from time to time availed themselves of the privilege afforded by the College Ordinances of attending detached Courses of the Lectures on selected subjects.

Under these circumstances, the Professor is gratified at being able to give the assurance that the Faculty of Law has fully realized the objects of its founders, and that a further extension of its public benefits would ensue upon the adoption by Government of the suggestion made by the same Committee of the House of Commons that a preference should be given to candidates for situations in the Civil Service, not of a purely legal nature, who could produce testimonials of legal attainments from those institutions—a rule which would fully accord with the principle laid down in a recent report of another Committee in relation to the Civil Service.

JURISPRUDENCE AND POLITICAL ECONOMY—*Professor, T. E. Cliffe Leslie*, LL.B.

The subjects embraced in the Course of Lectures on *Jurisprudence* are according to the regulations of this College, (1) the Elements of Jurisprudence, (2) Civil Law, (3) Constitutional Law, (4) Colonial and International Law.

In the treatment of these subjects both the *Historical* and *Philosophical* Methods are followed in the Lectures of the Professor. The Historical Method, for example, is applied in tracing the principal changes through which the laws of England have passed, the assignable causes of such changes, and the degree and manner in which, in comparison with the laws of Continental Europe, the laws of this kingdom have been affected by contact with the principles of Roman legislation. The method of Philosophical Analysis, on the other hand, is applied in investigating the doctrines of the foundation and classification of rights, the several parts and legitimate form of a complete code, the relation of Scientific Jurisprudence to other departments of Social Philosophy, and the means of improving the state of Positive Law as deducible from such considerations.

The subjects which a Course of Lectures on *Political Economy* must embrace are fewer and more definite than those classed under the less advanced and more complicated Science of Jurisprudence. It is the Professor's endeavour to illustrate the principles of Economic Science by the help of those practical applications which will be most interesting and useful in a large commercial town.

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General Class Examination.

APPENDIX, No. 8.

General Class Examination at the close of the Session 1866–67.

First Year Students.

The English Language.—*Examiner, Professor Yonge.*

1. From what country did the English language chiefly come, and from what other countries did it from time to time receive additions?

2. Give a few words derived from the language of each of these different countries.

3. What are the most remarkable differences between the English and the languages from which it is derived, in the inflection of words, whether verbs or nouns?

4. In English nouns, in what points do substantives and adjectives differ in inflection? Are there any exceptions, or apparent exceptions, to the general rule?

5. How many divisions of pronouns are there? Illustrate the answer by examples.

6. How do verbs form their preterites? Give examples of the different modes, and mention any classes into which verbs have been divided by grammarians in reference to those different modes.

7. What is the derivation and meaning of the word Syntax? To what does it relate?

8. What is the rule of construction in a case where the nominative case to the verb is a noun of multitude?

9. Give the three rules which Dr. Latham lays down with respect to "the concord of numbers" in the case of verbs and their nominative cases, with examples.

10. Distinguish between the uses of *shall* and *will*.

11. Give a list of a few of the principal auxiliary verbs, and explain the construction when they are followed by other verbs.

12. What is meant by the succession of tenses? Complete the sentences—

I do this that ....
I did this that ....
I will do this that ....
I have done this that ....

Third Year Arts Students.

Political Economy.—*Examiner, Professor Leslie.*

1. State the four Elementary Propositions of Political Economy, as Mr. Senior lays them down.

2. What proof does he give of the fourth of those propositions?

3. What is the connexion between the fourth proposition and the doctrine of land-rent?

4. By what cause is the average price of agricultural produce regulated, and why?

5. By what cause is the average price of most other things regulated, and why?

6. The relative value of things produced in different countries depends not on their cost of production, but on supply and demand. Explain this.

7. By a Law of Supply and Demand, some persons mean that demand regulates supply, and supply accords with demand, so that there is, on the average, just such a supply of things as consumers want most, and can pay the cost of:—

   (1.) Show the truth of this law as regards things of which there is no monopoly.

   (2.) Show the fallacy of applying it to things strictly limited in supply—for example, houses for the poor in towns.

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8. Mr. Mill says that the price of things limited in supply is the price at which demand and supply become equal. Explain his meaning.

General Class Examination.

9. Show that in some cases of limited supply, the demand may exceed the supply at the market price, so that Mr. Mill's proposition requires qualification.

10. Does emigration necessarily tend to equalize wages in Ireland and America, or not, and why?

11. Suppose a country contains ten million acres of first-rate land (A); twenty million acres of middling land (B); and forty million acres of very poor land (C):—

(1.) A tithe may begin at once upon cultivating any part of A.
(2.) As soon as it becomes necessary to cultivate any part of B, rent will begin over the whole of A, but not before. Why?
(3.) When will rent begin over B, and increase over A?
(4.) Show from the foregoing, that Mr. Senior's statement, that rent increases faster than a tithe, is incorrect; and that their relative rate of increase depends not on the increase in the amount of agricultural produce alone, but upon the rate at which its cost of production increases.

12. Show the error of Mr. Senior's argument, to prove that absenteeism is not injurious to the labouring class in a country such as England.

13. Explain the different tendency of taxes on raw and manufactured produce respectively, as regards the ultimate effect upon their price.

14. (1.) Explain the meaning of the following statements,—the mint price of 40 lbs. of gold is £1,869; the mint price of an oz. of gold is £3 17*s.* 10½*d.*
(2.) Show that a great fall in the value of gold could not affect the above price of 40 lbs. of gold, but might reduce the price of an oz. of gold below £3 17*s.* 10½*d.*

15. If the new gold mines had not been discovered there would, nevertheless, have been a change in comparative prices in different places. Why?

16. How have the causes which have altered comparative prices in different places affected the distribution and monetary results of the increase in the quality of the precious metals?

GEOLOGY AND ZOOLOGY.—*Examiner, Professor Wyville Thompson.*

GEOLOGY.

1. Describe, and give sketches of, the principal forms of dislocation of stratified rocks.

2. Describe a trap dyke, and describe and explain the effect which is produced by a dyke upon contiguous beds.

3. In what beds, and under what conditions, are mineral veins usually met with?

4. Explain the occurrence of fossils in sedimentary rocks, and their employment as a test of the relative age of beds.

5. What genera of the cephalopoda, the brachiopoda, the crinoidea, and the actinozoa, are most abundant in the mountain limestone?

6. Give the characters of the ganoid fishes, and give a sketch of their distribution in time.

ZOOLOGY.

1. Give the characters of the class mammalia, and distinguish mammals specially from reptiles.

2. Name, and give the leading characters of, two of the most marked forms of the edentata.

3. Explain the structure of the skeleton in the chelonian reptiles.

4. Describe the structure and the mode of attachment of the lower jaw in the five vertebrate classes.

5. Describe the organs of respiration in amphibia and reptiles.

6. Give a sketch of the relations and mode of development of the allantois.

7. Give the essential characters of the sub-kingdoms, annulosa, cœlenterata, echinodermata, and protozoa.

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General Class Examination.

LAW OF PROPERTY.—*Examiner, Professor Molyneux.*

1. What is the defect, *in point of security*, of a *judgment* registered as a mortgage under the 13 and 14 Vic., chap. 29, as contrasted with a *deed of mortgage* registered in the same office?

2. In what respects does the registration of deeds in Ireland, under the statute of Anne, operate; and how does such registration differ in object and effect from the registration or record of title under the 28 and 29 Vic., chap. 88?

3. When does the statute of limitations, 3 and 4 Wm. IV., begin to run in favour of a tenant at will? And what important change in the law was thereby effected?

4. In the investigation into an abstract of title in fee, of which an estate tail after an estate for life forms one of the links; what facts must be established in support of its validity, so far as that link in the chain of title is concerned?

5. What is the meaning of the expression "title by *purchase*," in relation to the acquisition of title to land? And how does the fact of title being acquired by purchase affect the process of ascertaining the heir at law upon intestacy?

6. Give an instance of words which, in a will, constitute an estate tail, but which have not the same operation in a deed.

7. What is the limit within which an absolute estate in land must vest so as to comply with the rule against perpetuities, and how does an estate tail, which apparently violates the rule, practically fall within that limit?

8. What is the operation of a lease for lives, containing a covenant for perpetual renewal, as recognized in courts of law and equity respectively? And what is the effect of the "Leasehold Conversion Act" in respect of a tenure of that nature? And how does the statute provide against the difficulty, which would ordinarily ensue, in finding an adequate grantor to represent the reversion, and an adequate representative of the original lessee, to accept the grant.

9. What are the rights of the husband in relation to his wife's real estate?

10. What is a base fee?

11. What was the object and effect of the statute of "*Quia Emptores?*"

12. What was the object of the statute "*de donis conditionalibus*," otherwise called the statute of entails, and how has the design of its framers been frustrated?

13. What is a vested remainder?

14. What is the prominent distinction between the development of title to freehold and chattel property, upon the intestacy of the owner, as relates to the persons who legally succeed to such classes of property respectively.

15. What are the statutable exceptions to the maxim, that the right of action for personal wrong dies with the person wronged?

16. What is the difference between general or pecuniary legacies and specific legacies? And how is a deficient fund applied as regards those classes respectively.

17. What is the order or priority in which different classes of debts are payable out of personal assets? And how is a deficient fund administered among creditors standing in equal degree or rank?

18. How does the mode of transferring the legal interest in movables differ from that of chattels real?

19. In what instance do next of kin take "*per capita*," and in what "*per stirpes?*"

20. What are the *statutable* exceptions to the maxim, that rights of action are not assignable? And what exception to the same principle exists at common law?

EQUITY AND BANKRUPTCY.—*Examiner, Professor Molyneux.*

1. State an instance in which Courts of Equity enforce the maxim, "Equality is Equity," when courts of law, in analogous cases, apply a different principle?

2. Give an instance of tacking in equity, and state the principle upon which that practice has been adopted by Courts of Equity. How far, in Ireland, is that practice affected by the Irish Registry Acts?

3. State an instance in which the maxim, "*equitas sequitur legem*" is applied by the court?

4. In what instance is the equitable relief against forfeiture modified by the ejectment acts?

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5. What is the relief administered by Courts of Equity in cases of partnership?

6. What renders an equitable mortgage, by deposit of title deeds, a hazardous security?

7. What are the rights and remedies of mortgagees at law and in equity respectively?

8. What are the liabilities of a trustee who invests the trust fund in trade, or any other unauthorized way, with a view to render it productive?

9. Within what branch of equitable jurisdiction does the decision fall, that a renewal of a terminable lease (which is in settlement), obtained by the tenant for life, for his own benefit, will be decreed as a graft upon the original lease for the benefit of persons deriving ulterior rights under the same settlement, which could not have been realized but for the new lease?

10. Testator dies leaving the lands of Blackacre and Whiteacre, together with personal estate. By his will he devises Blackacre, and bequeaths specific and general legacies. He was largely indebted at his death, and his personal assets are not sufficient to pay debts. How and in what order will his general assets be applied?

11. How does the position of a purchaser under the Court of Chancery differ from that of a purchaser under the Landed Estates Court?

12. What is the first question to be decided by the court in a suit by vendor against vendee for specific performance of an alleged contract for the sale of land? What is the primary or interlocutory decree or order made at the hearing, where that question is decided with the plaintiff? And what is the final decree pronounced for the plaintiff or defendant, as the case may be, in the same suit?

13. What are the three facts necessary to justify an adjudication in bankruptcy?

14. By what official act in the progress of the bankruptcy proceedings does the property of the bankrupt become vested in the assignee?

15. What acts of the bankrupt in relation to his property, prior to the petition, are rendered void respectively by the adjudication, and what acts are saved from its operation?

PLEADING, EVIDENCE, WILLS, POWERS, &c.—*Examiner, Professor Molyneux.*

1. What are the proofs preliminary to the admission of secondary evidence of a lost or mislaid document? And what are the preliminary proofs where it is alleged that the instrument is in the possession of the opposite party?

2. When a written agreement has been afterwards varied by parol, what is the mode of proof of the agreement, as so varied?

3. In what case alone is parol evidence of *intention* of the testator admissible where there is neither a patent or latent ambiguity in the will?

4. In what instances are the written statements of deceased persons admissible, although they are not in privity with the immediate subject of litigation?

5. To what averments in the *general* pleadings ought the evidence to be applied, where there have been pleadings *in confession and avoidance?*

6. To what extent can the tribunals of appeal from the superior courts of the common law take cognizance of the subjects of contest?

7. To what respects have wills of realty, and wills of personalty, been assimilated by the statute 7 Wm. IV., and 1 Vict., chap. 26?

8. In what respect has the same statute of wills reversed the presumption which had previously prevailed, in case of the execution of a *power* by *will?*

9. What provisions are contained in the same statute of wills, qualifying the previous law in relation to lapsed devises?

10. Limitation by devise of *freehold* after the words "die without issue;" what was the legal construction of those words before the same statute of wills? And what the construction when the bequest was chattel? And to what extent did that statute alter the law?

11. Will executed before the 1st of January, 1838, in the following words:—"I give and demise the lands of Blackacre to A.B.;" what estate was created in A.B. by that devise? And what would be the effect of the same words in a will executed after that day?

12. Give an instance of a demise by implication.

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13. What effect is given to terms technically legal used in a will? Is the rule of construction universal in that particular?

14. In what cases do Courts of Equity follow the rules of law in the construction of limitations in a deed, although the estates are all equitable? And in what class of cases do they put a more liberal construction upon instruments *inter vivos*, so as to effectuate the intention of the parties?

15. What classes of limitations were introduced under the statute of uses, which were unknown to the common law?

16. What are the several stages of a criminal prosecution?

17. What are the nature and effect of a motion in arrest of judgment?

18. Upon what state of pedigree are the next of kin ascertained "*per stirpes*" and when "*per capita*" in the distribution of personal property of an intestate?

19. What are the necessary proofs to support an action by indorsee of a bill of exchange against indorser?

20. In what respects do trading corporations, joint stock companies, and common law partnerships, differ in their constitution, legal rights, and liabilities?

21. What is the test by which it is to be ascertained whether an appointment, under a power, is within the rules against the creation of perpetuities?

22. Why does a lease for 1,000 years, under a power, operate to that extent, although the donee of the power may be only tenant for life?

23. What is the nature of the statutable remedy provided to give effect to leases under powers defectively exercised?

24. In what instances do Courts of Equity, of their own authority, give relief where powers of appointment have been defectively exercised?

LOGIC.—*Examiner, Dr. M^cCosh.*

1. What is the distinction between the Image or Phantasm of a class, and the Notion of a class, say the class of plants called "lilies"? Is the phantasm adequate? What is involved in the Universal Notion?

2. What is the precise nature of the Generalized Concrete Notion? How is it distinguished from the Singular Concrete, the Abstract, and the Generalized Abstract? How can a Generalized Concrete Notion, say "Man," be defined?

*3. "A country may be overrun by an armed host, but it is only conquered by the establishment of fortresses. Words are the fortresses of thought." Explain what this means. Show that it is true, and give illustrations.

*4. What are the subject and what the predicate in the following?—"All beauty will fade;" "the most sublime act is to set another before thee;" "the eagle lost much time when he submitted to learn of the crow;" "nothing is so easy as to object." Put the first in the various forms of Opposition. Convert the whole four, and explain the nature of Conversion, and the rule which regulates it.

*5 "That persons may reason without language is evident from the circumstance that infants reason, and yet have no language." Put this reasoning in the form of a syllogism in the third figure, and reduce it to the first figure.

*6. Prove that the minor premiss cannot be negative in the first and third figures.

7. Define "Conditional Proposition;" "Hypothetical Proposition;" "Categorical Reasoning;" "Hypothetical Reasoning." What is the Antecedent, and what the Consequent, what the major and minor premiss in the following?—"If Logic is of any value it will procure for us either wealth or honors; it does not procure either; therefore it is of no value." Reduce it to Categorica Form, and examine the validity of the reasoning in both forms.

8. Define "Fallacy." Examine the following:—

> What is no uncommon occurrence may reasonably be expected;
> To be successful in play is no uncommon occurrence;
> To be successful in play may be reasonably expected.

To what head of Fallacies is it to be referred? Define that Fallacy.

*9. What is meant by Evidence? What by Experimental Evidence? What by Circumstantial Evidence? Show that this kind of Evidence admits of degrees, and may involve responsibility.

10. What is the purpose served by the Prerogative Instances of Bacon, and

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the Canons of Induction? How may we ascertain that a Class is a Natural one?

11. A ship started three times on a Friday and was stranded on each occasion. It started a hundred times on other days, and was not stranded. The sailors conclude that the starting on the Fridays was the cause of the misfortune. What fallacy have they committed? Show that the Methods of Agreement and Difference do not entitle them to draw the inference?

12. What is the argument from analogy? Why are we entitled to argue from analogy, when we discover an arm of a human being in the earth, that the other arm must have been like it, and not entitled to argue that because the earth is inhabited, therefore the moon must be inhabited?

13. Explain briefly, but precisely, the nature of the three Methods available in the construction of science. Specify the sciences to which each is applicable.

N.B.—Those seeking Honors should omit the questions marked (*), and answer the following instead :—

HONOR QUESTIONS.

(α) Prove (1) that O cannot be a premiss in the First Figure; (2) that it cannot be the major premiss in the Second Figure; (3) that it cannot be the minor in the Third Figure; (4) and that it cannot be a premiss in the Fourth Figure.

(β) What is meant by reasoning in Comprehension? Put the example of reasoning in Query 5 in the form both of Extension and Comprehension; point out the difference between them, and say whether we spontaneously reason in Extension or Comprehension.

(γ) If you make the Abstract Notion different from the General Notion, what effect has this upon the logical analytic of Judgment and Reasoning?

(δ) What is the difference between the maxims or laws reached by the generalization of intuitions, and those reached by a gathered experience? Give examples.

(ε) Take the discovery of the law of gravitation (or any other law of nature) and show that it was reached by the joint Inductive and Deductive Method.

METAPHYSICS.—*Examiner, Dr. M'Cosh.*

1. How would you show, as against the materialist, that the Soul is different from the Body.

*2. What is the Inferential Theory of Sense Perception? Examine the validity of the inference. From what is it an inference?

3. State briefly but precisely what seem to be our original and what our acquired perceptions by the Sense of Sight.

4. Specify the most effective means of improving both the Retentiveness and the Readiness of Memory.

5. Give an analysis of Imagination. What makes it a distinct faculty?

6. What place has the "Idea" in Emotion? What sort of ideas call forth emotions? What ideas call forth feelings of the Ludicrous and Sublime?

7. Love may be considered as an Emotion, and an act of the Will. Bring out clearly the difference between the two. In which of the aspects is Love a virtue?

8. What is Attention? What influence has it on the train of ideas? How may it make actions virtuous or vicious?

9. Can the metaphysician prove first or fundamental truths? What then can he do in regard to them? In the answer mention the persons who used the epithets "first" and "fundamental," and say what qualities they designate.

*10. What precisely is the Intuitive Knowledge obtained by Self-Consciousness?

*11. What precisely is Hume's doctrine of Causation? What defects are there in it?

12. Discuss, with historical notices, the question, whether our perception of moral good be a Cognitive Act of Reason or a Feeling.

13. If our Intuitions as Native Laws are not before Consciousness, how can we discover them? If they look only to singulars how can we reach such necessary general truths as mathematical axioms?

Appendix, No. 8.

General Class Examination.

N.B.—Those seeking Honors should omit the questions marked (*), and answer the following instead :—

(*α*) "Matter may be defined a permanent possibility of sensation." Examine this definition, taking self-consciousness as witness of what passes in the mind.

(*β*) What is the Berkeleian theory of Vision? What truth and what error is in it?

(*γ*) What attempts have been made to reduce the Laws of Association to one law? What do those who attempt this make of the Law of Resemblance—as when a portrait suggests the original?

*1. According to what principle does Bacon classify the sciences? What place does he allot to Metaphysics and Logic? You may offer comments on his views in regard to any of these topics.

2. What, according to Hobbes, is the sole motive by which the will can be swayed ("motive force of the will")? What objections may be taken to his views on this subject? Name philosophers who opposed Hobbes on this and other points.

3. State and examine the doctrine of Descartes as to the way of proving the existence of Matter, and as to the nature of Matter.

4. State and examine Descartes' and Clarke's arguments for the Divine existence.

*5. What was the date of Locke's Essay? What the occasion of its being written, and the aim of the work? What subjects are discussed in Book IV? What is his definition of Knowledge? What objection has been taken to it?

6. What is Locke's definition of "Idea"? What is his precise doctrine as to the origin of our ideas? Did he hold that *nihil est in intellectu quod non prius fuerit in sensu?* What defect is there in his theory? What addition requires to be made to it?

7. When did Leibnitz live? State precisely his doctrine of Pre-established Harmony? What truth and what error is there in it?

*8. Name the works of Reid. What function does he allot to Common Sense? Name some of his judgments of common sense relating to Contingent truths. Examine them by the tests of intuition.

*9. What are Kant's Ideas of Pure Reason? How does he derive them? What objective value does he give them? You may offer comments.

10. What does Virtue consist in, according to Clarke, Hutcheson, Price, and Bentham? You may offer comments.

11. Trace briefly the rise and progress of Utilitarianism in Britain. What fundamental objections may be taken to it?

12. State Alison and Brown's theory of Beauty, and show wherein they agreed and wherein they differed. You may offer comments.

13. State and examine the distinction between the Understanding and the Reason as drawn by Coleridge.

N.B.—Those seeking Honors should omit the questions marked (*), and answer the following instead :—

HONOR QUESTIONS.

(*α*) State precisely Berkeley's doctrine as to Body, and examine it. In doing so, mention its relation to the philosophy of Locke, and show how Reid met it.

(*β*) Show what doctrines of Hume are sceptical, and how he may be met on these points.

(*γ*) Bring out the points of difference, and contrast between Locke and Kant.

(*δ*) Mention the British philosophers who have treated of the Association of Ideas. Some have said that Association can generate new ideas. Discuss this question.

ENGLISH LITERATURE.—*Examiner, Professor Yonge.*

SUBJECT FOR ESSAY.

On the English Drama, as exhibited in the works of Shakespeare, and compared with the Greek and French theatres.

Appendix, No. 8.

General Class-Examination.

QUESTIONS.

1. What are the chief divisions or classes of literature? Mention a few (one or two will be sufficient) of the most eminent writers in the different departments in our own language, with the reigns in which they flourished, giving also the names of their chief political contemporaries.

2. On what period may we with the greatest reason fix as that of the commencement of modern English literature? Explain why you select the period you mention, and what you know of the personal history of him whom you thus indicate as the real founder and parent of modern English literature.

3. What are the chief sources from which Shakespeare has derived the plots of his plays? Give an analysis of the plot, and the two leading characters of any one play.

4. What class of writers is Milton considered chiefly to have imitated in his "Paradise Lost"? Give a sketch of his plot, and compare it with the plot of any other epic poem, pointing out its advantages and disadvantages.

5. Dryden, whose example Pope followed, reproduced some of Chaucer's tales. What may we infer from that as to their opinion of Chaucer, and in what respect did either of them resemble him?

6. Point out some of the chief characteristics of Dryden's translation of Virgil, or of Pope's translation of Homer, adding some observations on the success to be attained by any poetical translation of a poem from one language into another.

7. Give a short sketch of Dr. Johnson's life. Compare his principal works with others of a similar character undertaken in England or in other countries.

8. What, up to the end of the last century, were the principal critical works in our language? Under what circumstances were they written, and what was the general purport of some one of them?

Logic.—*Examiner, Dr. M'Cosh.*

HONOR LOGIC.

1. What is Kant's definition of Logic? What his Division? Explain them, and examine in a general way the Kantian view of Logic.

2. Show how Language limits Thought and makes it take a certain form or mould, and point out the advantages and disadvantages of Language considered in this light.

3. Name distinguished Realists, and mention the age in which they lived. What truths and what excesses are in their doctrine?

4. What forms has the supreme Regulating Principle of Reasoning assumed? Discuss the question whether the Dictum of Aristotle is the regulating principle of all reasoning.

5. What is Mr. Mill's regulating principle, and what his formula? Examine them.

6. Give an example of a syllogism in the Fourth Figure. Discuss the question whether the Fourth Figure is legitimate.

7. What reasoning falls naturally into the form of A U A? Give an example. Show wherein A U A of the New Analytic differs from A A A of the Common Logic. In what Figures is it allowable? Is Y U A allowable? Is Y η ω?

8. Explain what is meant by C, ——: M: ——, Γ and give an example, designating the figure.

9. What is meant by "Tendencies"? What by "Causes"? What by "Conditions" or "Occasions"? What by "Effects"? What by "Incidental Consequences"?

10. Can there be a distinction drawn between Agent and Patient? But is the Cause the Agent and the Effect the Patient? Is the Effect ever contemporaneous with the Cause?

11. Explain the precise nature, and the difference, of the two Methods—the Method of Agreement and the Method of Difference. What is the imperfection of the Method of Agreement? How may the Method of Difference obviate this?

12. In what three ways may a law of causation admit of an explanation?

13. Distinguish between the Uniformity of Nature and the law of Cause and

Appendix, No. 8.

General-Class Examination.

Effect. To which of these is a Miracle opposed? Is a Miracle opposed to any intuitive principle?

14. Is a Philosophic Criterion of all truth possible? But may there be Criteria of certain classes of truth?

N.B.—Those aiming at mere PASS may substitute a part or the whole of the following in the room of a corresponding number of the above:—

PASS QUESTIONS.

(*a*). What are the Predicables of Aristotle? Wherein did those of Porphyry differ from them? Can the distinctions involved in these Predicables be carried out? Explain and illustrate the distinction adopted by Thomson.

(*β*). "This man, having consumption, will not live long." Put the reasoning involved in Categorical Form, first in Extension, and secondly in Comprehension. Put it also in Hypothetical Form. In what relation do these forms stand to each other?

(*γ*). Define "Dilemma." Put the following in correct form, specify the parts, and bring out the nature of the reasoning involved:—"If man is not a brute or a divinity he must be capable of making progress."

(*δ*). What is involved in the Joint Inductive and Deductive Method (the Deductive of Mill)? Show how certain departments of science do not admit of being brought under the Inductive Method Proper and require the application of the Joint Method.

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*1. What inquiries did Socrates set aside or discourage? What truths did he seek to establish?

2. In what relation did the Philosophy of Plato stand to that of men and schools that preceded him?

3. What is the First Philosophy, according to Aristotle? What does he mean by "Final Cause"? What place does Bacon give to Final Cause?

4. Show that Locke had a Rational as well as a Sensational and Experiential element in his philosophy.

5. What are Berkeley's and Brown's doctrines as to the eye being percipient of Colour and Extension? What is Hamilton's criticism?

*6. What were the chief points dwelt on by Shaftesbury and Hutcheson? What truths did they establish?

7. What is Hume's doctrine as to mind being a Substance, and as to our Belief in our Personal Identity?

8. What are the Characteristics of the Scottish School? Who best exemplify them? Did Hume possess them? or Brown?

9. What is Cosmothetic Idealism? How does Hamilton examine the hypothesis involved in it?

*10. What is the difference between Presentative and Representative Knowledge?

11. What are the Acts of Comparison, as unfolded by Hamilton? You may compare it with other accounts of the Relations discovered by the mind.

12. What is Hamilton's doctrine of Causation, objective and subjective? Examine it.

*13. What ambiguity is in the word "Conceive," and its derivatives? Some have employed man's power of "Conception," as a test of necessary truth. Examine it, and show what are the proper tests.

N.B.—Those seeking Honors should omit the questions marked (*), and answer the following instead:—

HONOR QUESTIONS.

(*a*). Show that upon the whole there has been an advance in the account given, and in the arrangement and classification, of the Faculties of the Mind, from the days of the Pre-Socratic Schools of Greece, of Plato and Aristotle, down to the present time.

(*β*). Name the principal English Philosophers of the 17th century. State briefly, but accurately, the questions discussed by them.

(*γ*). Give historical notices of the phrases "Common Sense" and "Moral Sense," of their introduction, and of the meaning attached to them.

(*δ*). How much did Kant allow to Hume? how much deny? You may offer comments.

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General Class Examination.

ANATOMY AND PHYSIOLOGY.—*Examiner, Dr. Redfern.*

[NOTE.—First Year Students are required to answer questions 1, 2, 3, 4; Second Year 1, 2, 4, 5; and Third and Fourth Year 3, 4, 5, 6, 7.]

1. State the views of Schleiden, Schwann, and Beale on the nature and action of organic cells.
2. Describe the characters of the bone corpuscles of human adult bone, and contrast them with those of primary bone and of the bones of aged persons.
3. Describe the characters and uses of saliva and pancreatic juice.
4. Describe the ultimate distribution of the hepatic artery in the liver.
5. State what varieties in the structure of the coats of veins occur in the human body.
6. State briefly the structure and action of the following parts:—Graafian vesicle,—Lieberkühnian follicle of small intestine,—a peptic gastric gland,—Meibomian gland,—sebaceous and sudoriferous gland,—duodenal gland.
7. What changes occur in the human eye during accommodation for the vision of near objects? How may these changes be produced? What structures of the eye have been proved to take no part in the accommodation, and give the proofs?

PRACTICAL ANATOMY.—*Examiner, Dr. Redfern.*

[NOTE.—In addition to making a dissection during a separate period of three hours, First Year Students are required to answer questions 1, 2, 3, 4; Second Year, 2, 3, 4, 5; and Third and Fourth Year, 4, 5, 6, 7.]

1. Describe the tibialis posticus muscle, its attachments, course, action, and relations.
2. State what ligaments and muscles are attached to the radius, and at what parts they are connected with it.
3. Describe the pterygo-maxillary ligament, and the muscles which are connected with it.
4. Describe the peroneal arteries, their course, anastomoses, and relations.
5. Describe the steps of a dissection which will expose the third stage of the subclavian artery,—mention the parts met with in their proper order, and give such details of their position and characters as will lead to their recognition.
6. Trace the course, and state the origin and mode of distribution of the arteries and nerves of the soft and hard pelate.
7. Describe the course, distribution, and relations of the branches of the posterior divisions of the first and second cervical nerves.

THEORY AND PRACTICE OF MEDICINE.—*Examiner, Dr. Cuming.*

FIRST YEAR STUDENTS.

1. Give an account of the mode in which the softening of Pulmonary Tubercle takes place.
2. Describe the anatomical lesions of the intestine which are found in Typhoid Fever.
3. How would you treat a case of Croup?
4. How is Hypertrophy of the Heart to be distinguished from Dilatation?
5. Enumerate the principal forms of Dyspepsia, and give an outline of the indications of treatment in each.

SECOND YEAR STUDENTS.

1. Give an account of the formation of Pus, as it occurs in mucous membranes.
2. What are the conditions on which the amount of albumen in transudations depends?
3. What are the microscopical characters of Tubercle?
4. Give an outline of the progress and treatment of an ordinary case of Measles.

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General Class Examination.

5. What are the physical signs of the first stages of Phthisis? Give their comparative value.

6. What circumstances influence the direction in which Emboli are carried from the left side of the heart?

MEDICAL JURISPRUDENCE.—*Examiner, Dr. Hodges.*

1. Give a short statement of the results of M. Claude Bernard's Experiments with the Curara Poison.
2. How is Antimony to be detected in the substance of the tissues?
3. What are the symptoms of the Chronic form of poisoning by Antimony?
4. What are the symptoms of poisoning by Benzole?
5. Mention a general test for the Alkaloids, and state the precautions required in its application.
6. What is the treatment to be adopted in poisoning by Prussic Acid?
7. What is known respecting the period required for the elimination from the body of the following poisons—Arsenic, Antimony, Lead, Mercury?

THE FRENCH LANGUAGE.—*Examiner, Professor Meissner.*

I.—Translate into English:

Dans les temps homériques, quand les étrangers étaient jetés sur la plage. par la tempête, on les regardait comme des victimes punies justement par le courroux des dieux, et on les immolait à Diane. C'était de la superstition et de la barbarie. Maintenant il y a une autre superstition et une autre barbarie: c'est la quarantaine. . . . . Il y a quatre ans, le choléra était à Berlin, et à Naples l'on mourait de peur. Je me rappelle que, arrivant sur ce même *Henri IV.*, qui n'y retournera plus, nous attendîmes depuis huit heures du matin jusqu'à quatre heures de l'après-midi qu'on eût décidé si l'on nous recevrait ou non; notre crime était d'avoir à bord un Suisse de Neufchâtel. Comme sujet du roi de Prusse, il avait un passe-port prussien. Il fallut beaucoup d'efforts et une demi-journée pour persuader au conseil de santé que Neufchâtel n'était pas à la porte de Berlin. Rien de plus burlesque que les précautions dont on s'avisait alors pour se garantir de la contagion des lettres: car chacune d'elles pouvait apporter le choléra sous enveloppe. Il n'est aspersion ou fumigation qu'on n'essayât, bien qu'il n'y ait aucune raison de croire que la terrible maladie ait la moindre peur du vinaigre ou de la fumée.—J. J. AMPÈRE.

II.—Translate into French:

Who answers in Spanish? I do. How have you finished your letter? I have the honour to be, sir, your very obedient servant. Will you write to the Englishman? No, I am going to write to the Englishwoman. In what season do the birds sing? In spring and summer. Have you paid your workmen and his? I have paid mine in the morning and he will pay his in the evening. When shall I receive these parcels? I will send them to you to-morrow. Have you spoken of the duke? No, we have spoken of the duchess.

III.—My sojourn in New England enabled me to appreciate the truth of an observation I have heard made by many intelligent Americans, that the effect of this civil war will be to consolidate the country. If it were not for the common interest in the war, it would have been hard to realize that Boston formed part of the same country as Chicago, and St. Louis, and Nashville. There, as elsewhere, the war seemed to me the chief bond of union between the different states of the North. Nowhere, indeed, in my own observation, was the ardour for the war greater than in Massachusetts.—EDWARD DICEY.

IV. (*a*) Give the 3rd pers. sing. pres. of *mouvoir, tenir, battre, aller payer, prendre.*

(*b*) The 3rd pers. plur. preterite, } of the same verbs.
(*c*) The past participle, }
(*d*) Give the plurals of *mon, château, canal, arc-en-ciel.*
(*e*) The feminine of *doux, net, brave, chanteur.*
(*f*) Form adverbs from *constant, poli, heureux.*

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General
Class Examination.

GREEK.—*Examiner, Professor MacDouall.*

FIRST YEAR STUDENTS.

I.—Translate accurately and perspicuously these lines from the XVIIIth Book of the *Ilias* :—

τὴν δ' ἑτέρην πόλιν ἀμφὶ δύω[1] στρατοὶ εἵατο[2] λαῶν
τεύχεσι λαμπόμενοι. δίχα δέ σφισι[3] ἥνδανε βουλή,
ἠὲ διαπραθέειν[4] ἤ' ἄνδιχα[21] πάντα δάσασθαι,[5]
κτῆσιν ὅσην πτολίεθρον ἐπήρατον[22] ἐντὸς ἐέργοι.
οἱ δ' οὔ πω πείθοντο, λόχῳ δ' ὑπεθωρήσσοντο.
τεῖχος μέν ῥ' ἄλοχοί τε φίλαι καὶ νήπια[23] τέκνα
ῥύατ'[6] ἐφεσταότες,[7] μετὰ δ' ἀνέρες οὓς ἔχε γῆρας·
οἳ δ' ἴσαν.[8] ἦρχε δ' ἄρα σφιν[3] Ἄρης καὶ Παλλὰς Ἀθήνη.
ἄμφω χρυσείω, χρύσεια δὲ εἵματα ἕσθην,[9]
ἀμφὶς ἀριζήλω[24]· λαοὶ δ' ὑπ' ὀλίζονες[10] ἦσαν.
οἳ δ' ὅτε δή ῥ' ἵκανον ὅθι σφίσι εἶκε λοχῆσαι,
ἐν ποταμῷ ὅθι τ' ἀρδμὸς[25] ἔην πάντεσσι βοτοῖσιν,[26]
ἔνθ' ἄρα τοί γ' ἵζον εἰλυμένοι[11] αἴθοπι[27] χαλκῷ.
τοῖσι δ' ἔπειτ' ἀπάνευθε δύω σκοποὶ εἵατο λαῶν,
δέγμενοι[12] ὁππότε μῆλα ἰδοίατο[13] καὶ ἕλικας βοῦς.
οἳ δὲ τάχα προγένοντο, δύω δ' ἅμ' ἕποντο νομῆες
τερπόμενοι σύριγξι· δόλον δ' οὔ τι προνόησαν.
οἳ μὲν τὰ προϊδόντες ἐπέδραμον,[14] ὦκα δ' ἔπειτα
τάμνοντ' ἀμφὶ βοῶν ἀγέλας καὶ πώεα καλὰ
ἀργεννέων[27] οἰῶν, κτεῖνον δ' ἐπὶ μηλοβοτῆρας·
οἳ δ', ὡς οὖν ἐπύθοντο[15] πολὺν κέλαδον παρὰ βουσὶν
εἰράων[28] προπάροιθε καθήμενοι, αὐτίκ' ἐφ' ἵππων
βάντες ἀερσιπόδων[29] μετεκίαθον,[30] αἶψα δ' ἵκοντο.
στησάμενοι δ' ἐμάχοντο μάχην ποταμοῖο παρ' ὄχθας,
βάλλον δ' ἀλλήλους χαλκήρεσιν[31] ἐγχείῃσιν.
ἐν δ' Ἔρις, ἐν δὲ Κυδοιμὸς ὁμίλεεν· ἐν δ' ὀλοὴ Κήρ,[32]
ἄλλον ζωὸν ἔχουσα νεούτατον ἄλλον ἄουτον[33]
ἄλλον τεθνηῶτα,[16] κατὰ μόθον ἕλκε ποδοῖιν·
εἷμα δ' ἔχ' ἀμφ' ὤμοισι δαφοινεὸν[34] αἵματι φωτῶν.[35]
ὡμίλευν δ' ὥς τε ζωοὶ βροτοὶ ἠδὲ μάχοντο,
νεκρούς τ' ἀλλήλων ἔρυον κατατεθνηῶτας.
ἐν δ' ἐτίθη νειὸν μαλακήν, πίειραν[36] ἄρουραν,
εὐρεῖαν τρίπολον·[37] πολλοὶ δ' ἀροτῆρες ἐν αὐτῇ
ζεύγεα δινεύοντες ἐλάστρεον[17] ἔνθα καὶ ἔνθα.
οἳ δ' ὁπότε στρέψαντες ἱκοίατο τέλσον[38] ἀρούρης,
τοῖσι δ' ἔπειτ' ἐν χερσὶ δέπας μέλανος οἴνοιο
δόσκεν[18] ἀνὴρ ἐπιών· τοὶ δὲ στρέψασκον ἀν' ὄγμους,[39]
ἱέμενοι νειοῖο βαθείης τέλσον ἱκέσθαι.
ἡ δὲ μελαίνετ' ὄπισθεν, ἀρηρομένῃ[40] δὲ ἐῴκειν[19]
χρυσείη περ ἐοῦσα· τὸ δὴ περὶ θαῦμα τέτυκτο.[20]

II.—1. Those students who seek a mere Pass will parse accurately all the words above numbered from 1 to 20, giving the Attic form of each in every case where it differs.

2. Candidates for Honors will derive or decompound all the words numbered from 21 to 40.

3. All will indicate the words in which lost letters (such as Ϝ, σ, κ, λ) are to be restored in accordance with metre, analogy, and tradition.

4. To the translation should be annexed either a condensed paraphrase or a discussion, with a view to discriminate clearly between the several figures, groups, scenes, and employments depicted—especially in connexion with the besieged city, but also in reference to the ploughed field.

5. Remarks may be added upon other devices on the Shield, taking up either the whole or special departments.

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General Class Examination.

I.—1. The following lines from the *Troades* of EURIPIDES will be translated by all who do not compete for Honors:—

ὅσαι δ' ἄκληροι[9] Τρῳάδων, ὑπὸ στέγαις
ταῖσδ' εἰσί, τοῖς πρώτοισιν ἐξῃρημέναι[1]
στρατοῦ· σὺν αὐταῖς δ' ἡ Λάκαινα[10] Τυνδαρὶς[11]
Ἑλένη, νομισθεῖσ'[2] αἰχμάλωτος[12] ἐνδίκως
τὴν δ' ἀθλίαν τήνδ' εἴ τις εἰσορᾷν θέλει,
πάρεστιν, Ἑκάβην, κειμένην πυλῶν πάρος,
δάκρυα χέουσαν[3] πολλὰ καὶ πολλῶν ὕπερ·
ᾗ παῖς μὲν ἀμφὶ μνῆμ' Ἀχιλλείου τάφου
λάθρα[13] τέθνηκε[4] τλημόνως[14] Πολυξένη,
φροῦδος[15] δὲ Πρίαμος καὶ τέκν' ἣν δὲ παρθένον
μεθῆκ'[5] Ἀπόλλων δρομάδα[16] Κασάνδραν ἄναξ,
τὸ τοῦ θεοῦ τε παραλιπὼν[6] τό τ' εὐσεβὲς
γαμεῖ βιαίως σκότιον Ἀγαμέμνων λέχος,
ἀλλ', ὦ ποτ' εὐτυχοῦσα, χαῖρέ μοι, πόλις,
ξεστόν[17] τε πύργωμ'! εἴ σε μὴ διώλεσεν[7]
Παλλὰς Διὸς παῖς, ἦσθ' ἂν ἐν βάθροις[18] ἔτι.

1. The words numbered from 1 to 8 are to be accurately parsed.
2. The words numbered from 9 to 18 are to be derived or decompounded.
3. The 10th, 11th, 12th, and 13th lines are to be written out and scanned, the feet being discriminated and the quantity marked over every syllable.

II.—Candidates for Honors will translate perspicuously the following Ode, and subjoin brief annotations:—

ἀμφί μοι Ἴλιον, ὦ Μοῦσα! καινῶν ὕμνων [στρ.
ᾆσον ἐν δακρύοις ᾠδὰν ἐπικήδειον.
νῦν γὰρ μέλος εἰς Τροίαν ἰαχήσω,
τετραβάμονος ὡς ὑπ' ἀπήνας
Ἀργείων ὀλόμαν τάλαινα δοριάλωτος, εὖτ'
ἔλιπον οὐράνια βρέμοντες ἵππον
χρυσεοφάλαρον ἔνοπλον ἐν πύλαις Ἀχαιοί·
ἀνὰ δ' ἐβόασεν λεὼς
Τρῳάδος ἀπὸ πέτρας σταθείς·
"ἴτ', ὦ πεπαυμένοι πόνων,
τόδ' ἱερὸν ἀνάγετε ξόανον
Ἰλιάδι διογενεῖ κόρᾳ!"
τίς οὐκ ἔβα νεανίδων, τίς οὐ γεραιὸς ἐκ δόμων;
κεχαρμένοι δ' ἀοιδαῖς δόλιον ἔσχον ἄταν.
πᾶσα δὲ γέννα Φρυγῶν πρὸς πύλας ὡρμάθη, [ἀντιστρ.
πεύκᾳ ἐν οὐρείᾳ ξεστὸν δόλον Ἀργείων
καὶ Δαρδανίας ἄταν θεᾷ δώσων
χάριν ἀζυγεῖ ἀμβροτοπώλῳ,
κλωστοῖς δ' ἀμφιβόλοις λίνοισιν, ὡσεὶ ναὸς σκάφος
κελαινόν, εἰς ἕδρανά τε λάϊνα δάπεδά τε
δάπεδα φόνια πατρίδι Παλλάδος θέσαν θεᾶς.
ἐπὶ δὲ πόνῳ καὶ χαρᾷ
νύχιον ἐπεὶ κνέφας παρῆν,
Λίβυς δὲ λωτὸς ἐκτύπει
Φρύγιά τε μέλεα, παρθένοι δ'
ἀέριον ἀνὰ κρότον ποδῶν
βοὰν ἔμελπον εὔφρον', ἐν δόμοις δὲ παμφαὲς σέλας
πυρὸς μέλαιναν αἴγλαν ἀπεδίωκε καπνῷ.
ἐγὼ δὲ τὰν ὀρεστέραν τότ' ἀμφὶ μέλαθρα παρθένον [ἐπῳδός.
Διὸς κόραν ἐμελπόμαν χοροῖσι, φοινία δ' ἀνὰ
πτόλιν βοὰ κατεῖχε Περγάμων ἕδρας· φίλα δὲ βρέφη
πέπλοισι περὶ ἔβαλλε ματρὶ χεῖρας ἐπτοημένας.
λόχος δ' ἐξέβαιν' Ἄρη κόρας ἔργα Παλλάδος,
σφαγαὶ δ' ἀμφιβώμιοι Φρυγῶν ἔν τε δεμνίοις
καράτομος ἐρημία νεανιῶν στέφανον ἔφερεν
Ἑλλάδι κουροτρόφῳ Φρυγῶν δὲ πατρίδι πένθη.

SECOND YEAR STUDENTS.

General Class Examination

I.—All will translate perspicuously these lines from the VIIth Book of the *Odysseia* :—

χρύσειοι δ' ἄρα κοῦροι ἐυδμήτων[21] ἐπὶ βωμῶν
ἕστασαν αἰθομένας[2] δαΐδας μετὰ χερσὶν ἔχοντες,
φαίνοντες νύκτας κατὰ δώματα δαιτυμόνεσσιν.[3]
πεντήκοντα δέ οἱ δμωαὶ κατὰ δῶμα γυναῖκες—
αἱ μὲν ἀλετρεύουσι[22] μύλης[4] ἔπι μήλοπα[23] καρπόν,
αἱ δ' ἱστοὺς ὑφάονσι καὶ ἠλάκατα[24] στρωφῶσιν[5]
ἥμεναι, οἷά τε[6] φύλλα μακεδνῆς[25] αἰγείροιο·
καιρωσέων[26] δ' ὀθονέων[7] ἀπολείβεται ὑγρὸν ἔλαιον.
ὅσσον Φαίηκες περὶ πάντων ἴδριες ἀνδρῶν
νῆα θοὴν ἐνὶ πόντῳ ἐλαυνέμεν,[8] ὣς δὲ[9] γυναῖκες
ἱστὸν τεχνῆσσαι·[10] περὶ γάρ σφισι[11] δῶκεν Ἀθήνη
ἔργα τ' ἐπίστασθαι περικαλλέα καὶ χρένας ἐσθλάς.
ἔκτοσθεν δ' αὐλῆς μέγας ὄρχατος[27] ἄγχι θυράων
τετράγυος·[28] περὶ δ' ἕρκος ἐλήλαται[12] ἀμφοτέρωθεν.
ἔνθα δὲ δένδρεα μακρὰ πεφύκασιν[13] θαλέθοντα,
ὄγχναι καὶ ῥοιαὶ καὶ μηλέαι ἀγλαόκαρποι
συκέαι τε γλυκεραὶ καὶ ἐλαῖαι τηλεθάουσαι.
τάων[14] οὔ ποτε καρπὸς ἀπόλλυται οὐδ' ἀπολείπει
χείματος οὐδὲ θέρευς[15] ἐπετήσιος·[29] ἀλλὰ μάλ' αἰεὶ
ζεφυρίη πνείουσα τὰ μὲν φύει ἄλλα δὲ πέσσει.
ἔνθα δέ οἱ πολύβοτρυς ἀλωὴ ἐρρίζωται,[10]
τῆς ἕτερη μέν θ' εἱλόπεδον[16] λευρῷ ἐνὶ χώρῳ
τέρσεται[17] ἠελίῳ, ἑτέρη δ' ἄρα τε τρυγάουσιν,[31]
ἄλλη δὲ τραπέουσι·[18] πάροιθε δέ τ' ὄμφακές εἰσιν
ἄνθος ἀφιεῖσαι, ἕτεραι δ' ὑποπερκάζουσιν.[31]
ἔνθα δὲ κοσμηταὶ πρασιαὶ παρὰ νείατον[19] ὄρχον
παντοῖαι πεφύασιν[20] ἐπηετανὸν[32] γανάουσαι.
ἐν δὲ δύω κρῆναι—ἡ μέν τ' ἀνὰ κῆπον ἅπαντα
σκίδναται, ἡ δ' ἑτέρωθεν ὑπ' αὐλῆς οὐδὸν ἵησιν
πρὸς δόμον ὑψηλόν, ὅθεν ὑδρεύοντο πολῖται

And Candidates for Honors will translate likewise these lines from Book VIII. :—

οὐδὲ Ποσειδάωνα γέλως ἔχε, λίσσετο δ' αἰεὶ
Ἥφαιστον κλυτοεργὸν ὅπως λύσειεν Ἄρηα.
καί μιν φωνήσας ἔπεα πτερόεντα προσηύδα.
"λῦσον· ἐγὼ δέ τοι αὐτὸν ὑπίσχομαι, ὡς σὺ κελεύεις,
τίσειν αἴσιμα πάντα μετ' ἀθανάτοισι θεοῖσιν."
τὸν δ' αὖτε προσέειπε περικλυτὸς Ἀμφιγυήεις·
"μή με, Ποσείδαον γαιήοχε! ταῦτα κέλευε·
δειλαί τοι δειλῶν γε καὶ ἐγγύαι ἐγγυάασθαι.
πῶς ἂν ἐγώ σε δέοιμι μετ' ἀθανάτοισι θεοῖσιν,
εἴ κεν Ἄρης οἴχοιτο χρέος καὶ δεσμὸν ἀλύξας;"
τὸν δ' αὖτε προσέειπε Ποσειδάων ἐνοσίχθων·
"Ἥφαιστ'! εἴ περ γάρ κεν Ἄρης χρεῖος ὑπαλύξας
οἴχηται φεύγων, αὐτός τοι ἐγὼ τάδε τίσω."
τὸν δ' ἠμείβετ' ἔπειτα περικλυτὸς Ἀμφιγυήεις·
"οὐκ ἔστ' οὐδὲ ἔοικε τεὸν ἔπος ἀρνήσασθαι."
ὣς εἰπὼν δεσμὸν ἀνίη μένος Ἡφαίστοιο.

II.—1. Those who seek a mere Pass will parse accurately the words above numbered from 1 to 20, giving the Attic form of each whenever it differs.

2. Competitors for Honors will derive or decompound the words above numbered from 21 to 32.

3. All will indicate the words in which lost letters (such as Ϝ, σ, κ, λ) are to be restored in accordance with metre, analogy, and tradition.

4. All will try to elucidate (*a*) the position of the gardens, and (*b*) the uses made of the two water springs.

5. Competitors for Honors will criticise as well as interpret the second extract—if not also the first—and suggest any corrections of the text which may seem necessary or desirable.

No. 8.

General Class Examination.

I.—Translate perspicuously these lines from the *Prometheus Vinctus* of Aeschylus:—

λέγων ἔοικα πολλὰ καὶ μάτην[1] ἐρεῖν·
τέγγει γὰρ οὐδὲν οὐδὲ μαλθάσσει[2] κέαρ
λιταῖς· δάκνων δὲ στόμιον[3] ὡς νεοζυγὴς
πῶλος βιάζει καὶ πρὸς ἡνίας μάχει.
ἀτὰρ σφοδρύνει[4] γ' ἀσθενεῖ σοφίσματι.
αὐθαδία[5] γὰρ τῷ φρονοῦντι μὴ καλῶς
αὐτὴ καθ' αὑτὴν οὐδενὸς μεῖον σθένει.
σκέψαι δ', ἐὰν μὴ τοῖς ἐμοῖς πεισθῇς λόγοις,
οἷός σε χειμὼν καὶ κακῶν τρικυμία[6]
ἔπεισ' ἄφυκτος. πρῶτα μὲν γὰρ ὀκρίδα[7]
φάραγγα βροντῇ καὶ κεραυνίᾳ φλογὶ
Πατὴρ σπαράξει τήνδε καὶ κρύψει δέμας
τὸ σὸν, πετραία δ' ἀγκάλη[8] σε βαστάσει.
μακρὸν δὲ μῆκος ἐκτελευτήσας χρόνου
ἄψορρον[9] ἥξεις ἐς φάος· Διὸς δέ σοι
πτηνὸς κύων, δαφοινὸς[10] αἰετὸς, λάβρως
διαρταμήσει[12] σώματος μέγα ῥάκος,
ἄκλητος ἕρπων δαιταλεὺς[13] πανήμερος,
κελαινόβρωτον[14] δ' ἧπαρ ἐκθοινήσεται.
τοιοῦδε μόχθου τέρμα μή τι προσδόκα,[16]
πρὶν ἂν θεῶν τις διάδοχος τῶν σῶν πόνων
φανῇ θελήσῃ τ' εἰς ἀναύγητον μολεῖν
Ἅιδην κνεφαῖά[16] τ' ἀμφὶ Ταρτάρου βάθη.

II.—1. Give the laws of the metre here exemplified.

2. Scan the 3rd, 21st, and 17th lines, discriminating the feet, and marking the quantity over every syllable. In connexion with the 17th line state how a short vowel before initial ρ is treated in iambic and also in epic verses.

3. Derive or decompound every word to which a number is affixed in the extract.

4. Comment critically on some clauses, the reading or the interpretation of which may be doubtful.

III.—Translate the following sentences (from Goldsmith) in Attic prose, and accentuate your version throughout:—

The right of capital punishment is obvious in cases of murder; as it is the duty of all, from the law of self-defence, to cut off that man who has shown a disregard for the life of another. Against such, all nature rises in arms. But it is not so against him who steals my property. Natural law gives me no right to take away his life, as by that the horse he steals is as much his property as mine. If then I have any right, it must be from a compact made between us, that he who deprives the other of his horse shall die. But this is a false compact; because no man has a right to barter his life, any more than to take it away, as it is not his own. And besides, the compact is inadequate, and would be set aside even in a court of modern equity, as imposing a great penalty for a trifling inconvenience, since it is far better that two men should live than one man should ride.

THIRD YEAR STUDENTS.

I.—Translate perspicuously, and in a good English style, the following excerpts from the Xth Book of the *Politeia* of Platon:—

"Τὸ μὲν βίᾳ κατεχόμενον ἐν ταῖς οἰκείαις ξυμφοραῖς καὶ πεπεινηκὸς τοῦ δακρῦσαι καὶ ἀποδύρασθαι ἱκανῶς καὶ ἀποπλησθῆναι, φύσει ὂν τοιοῦτον οἷον τούτων ἐπιθυμεῖν, τοῦτ' ἐστὶ τὸ ὑπὸ τῶν ποιητῶν πιμπλάμενον καὶ χαῖρον. τὸ δὲ φύσει βέλτιστον ἡμῶν, ἅτε οὐχ ἱκανῶς πεπαιδευμένον λόγῳ οὐδὲ ἔθει, ἀνίησι τὴν φυλακὴν τοῦ θρηνώδους τούτου, ἅτε ἀλλότρια πάθη θεωροῦν καὶ ἑαυτῷ οὐδὲν αἰσχρὸν ὄν, εἰ ἄλλος ἀνὴρ ἀγαθὸς φάσκων εἶναι ἀκαίρως πενθεῖ, τοῦτον ἐπαινεῖν καὶ ἐλεεῖν· ἀλλ' ἐκεῖνο κερδαίνειν ἡγεῖται, τὴν ἡδονήν, καὶ οὐκ ἂν δέξαιτο αὐτῆς στερηθῆναι καταφρονήσας ὅλου τοῦ ποιήματος. λογίζεσθαι γάρ, οἶμαι, ὀλίγοις τισὶ μέτεστιν ὅτι ἀπολαβεῖν ἀνάγκη ἀπὸ τῶν ἀλλοτρίων εἰς τὰ οἰκεῖα· θρέψαντα γὰρ ἐν ἐκείνοις ἰσχυρὸν τὸ ἐλεεινὸν οὐ ῥᾴδιον ἐν τοῖς αὑτοῦ πάθεσι κατέχειν." "ἀληθέστατα," ἔφη. "ἆρ' οὖν οὐχ ὁ αὐτὸς λόγος καὶ περὶ τοῦ γελοίου, ὅ τι ἂν αὐτὸς αἰσχύνοιο γελωτοποιῶν, ἣν ἐν μιμήσει κωμῳδικῇ ἢ καὶ ἰδίᾳ ἀκούων σφόδρα χαίρῃς καὶ μὴ μισῇς ταὐτὸν ποιῶν ὅ περ ἐν τοῖς ἐλέοις; ὃ γὰρ τῷ λόγῳ αὖ κατεῖχες ἐν σαυτῷ βουλόμενον γελωτοποιεῖν, φοβούμενος δόξαν βωμολοχίας, τότ' αὖ ἀνίης, καὶ ἐκεῖ νεανικὸν ποιήσας ἔλαθες πολλάκις ἐν τοῖς οἰκείοις ἐξενεχθείς, ὥστε κωμῳδοποιὸς γενέσθαι." "καὶ μάλα," ἔφη. "καὶ περὶ ἀφροδισίων δὴ καὶ θυμοῦ καὶ περὶ πάντων τῶν ἐπιθυμητικῶν τε καὶ λυπηρῶν καὶ ἡδέων ἐν τῇ ψυχῇ, ἃ δή φαμεν πάσῃ πράξει ἡμῖν ἕπεσθαι, δῆλον ὅτι τοιαῦτα ἡμᾶς ἡ ποιητικὴ μίμησις ἐργάζεται. τρέφει γὰρ ταῦτα ἄρδουσα, δέον αὐχμεῖν, καὶ ἄρχοντα ἡμῖν καθίστησι, δέον ἄρχεσθαι αὐτά, ἵνα βελτίους τε καὶ εὐδαιμονέστεροι ἀντὶ χειρόνων καὶ ἀθλιωτέρων γιγνώμεθα." "οὐκ ἔχω ἄλλως φάναι," ἦ δ' ὅς. . . . . "ἡμεῖς γε, εἴ τινα ἔχοι λόγον εἰπεῖν ἡ πρὸς ἡδονὴν ποιητικὴ καὶ ἡ μίμησις, ὡς χρὴ αὐτὴν εἶναι ἐν πόλει εὐνομουμένῃ. ἄσμενοι ἂν καταδεχοίμεθα, ὡς ξύνισμέν γε ἡμῖν αὐτοῖς κηλουμένοις ὑπ' αὐτῆς. ἀλλὰ γὰρ τὸ δοκοῦν ἀληθὲς οὐχ ὅσιον προδιδόναι. ἦ γάρ, ὦ φίλε! οὐ κηλεῖ ὑπ' αὐτῆς καὶ σύ. καὶ μάλιστα ὅταν δι' Ὁμήρου θεωρῇς αὐτήν;" "πολύ γε." "οὐκοῦν δικαία ἐστὶν οὕτω κατιέναι ἀπολογησαμένη ἢ ἐν μέλει ἤ τινι ἄλλῳ μέτρῳ;" "πάνυ μὲν οὖν." "δοῖμεν δέ γέ που ἂν καὶ τοῖς προστάταις αὐτῆς, ὅσοι μὴ ποιητικοὶ φιλοποιηταὶ δέ, ἄνευ μέτρου λόγον ὑπὲρ αὐτῆς εἰπεῖν, ὡς οὐ μόνον ἡδεῖα ἀλλὰ καὶ ὠφελίμη πρὸς τὰς πολιτείας καὶ τὸν βίον τὸν ἀνθρώπινόν ἐστι. καὶ εὐμενῶς ἀκουσόμεθα· κερδανοῦμεν γάρ που, ἐὰν μὴ μόνον ἡδεῖα φανῇ ἀλλὰ καὶ ὠφελίμη." "πῶς δ' οὐ μέλλομεν," ἔφη, "κερδαίνειν;" "εἰ δέ γε μή, ὦ φίλε ἑταῖρε! ὥς περ οἱ ποτέ του ἐρασθέντες, ἐὰν ἡγήσωνται μὴ ὠφέλιμον εἶναι τὸν ἔρωτα, βίᾳ μὲν ὅμως δὲ ἀπέχονται, καὶ ἡμεῖς οὕτω, διὰ τὸν ἐγγεγονότα μὲν ἔρωτα τῆς τοιαύτης ποιήσεως ὑπὸ τῆς τῶν καλῶν πολιτειῶν τροφῆς, εὖνοι μὲν ἐνδεξόμεθα φανῆναι αὐτὴν ὡς βελτίστην καὶ ἀληθεστάτην, ἕως δ' ἂν μὴ οἵα τ' ᾖ ἀπολογήσασθαι, ἀκροασόμεθ' ἐπᾴδοντες ἡμῖν αὐτοῖς ταύτην τὴν ἐπῳδὴν καὶ τοῦτον τὸν λόγον ὃν ἐλέγομεν, εὐλαβούμενοι πάλιν ἐμπεσεῖν εἰς τὸν παιδικόν τε καὶ τὸν τῶν πολλῶν ἔρωτα. αἰσθανόμεθα δ' οὖν ὡς οὐ σπουδαστέον ἐπὶ τῇ τοιαύτῃ ποιήσει ὡς ἀληθείας τε ἁπτομένῃ καὶ σπουδαίᾳ, ἀλλ' εὐλαβητέον αὐτὴν τῷ ἀκροωμένῳ, περὶ τῆς ἐν αὐτῷ πολιτείας δεδιότι, καὶ νομιστέα ἅ περ εἰρήκαμεν περὶ ποιήσεως."

II.—In very brief notes you may elucidate any elliptical or harsh constructions and such idioms as you consider most remarkable.

III.—Trace succinctly the lines of discussion pursued in this book, noting how one glides into another, and commenting upon the treatment of the Pamphylian myth at the close.

LATIN.—*Examiner, Professor Nesbitt.*

FIRST YEAR STUDENTS.

Translate:

1. Perventum inde ad frequentem cultoribus alium, ut inter montanos, populum. ibi non bello aperto sed suis artibus, fraude et insidiis, est prope circumventus. magno natu principes castellorum oratores ad Poenum veniunt, alienis malis, utili exemplo, doctos memorantes amicitiam malle quam vim experiri Poenorum; itaque obedienter imperata facturos: commeatum itinerisque duces et ad fidem promissorum obsides acciperet. Hannibal nec temere credendum nec aspernandum ratus, ne repudiati aperte hostes fierent benigne cum respondisset, obsidibus quos dabant acceptis et commeatu, quem in viam ipsi detulerant, usus, nequaquam ut inter pacatos, composito agmine duces eorum sequitur. primum agmen elephanti et equites erant, ipse post cum robore peditum circumspectans sollicitusque omnia incedebat. ubi in angustiorem viam et parte altera subiectam iugo insuper imminenti ventum est undique ex insidiis barbari a fronte ab tergo coorti comminus eminus petunt, saxa ingentia in agmen devolvunt. maxima ab tergo vis hominum urgebat. in eos versa peditum acies haud dubium fecit, quin, nisi firmata extrema agminis fuissent, ingens in eo saltu accipienda clades fuerit. tunc quoque ad extremum periculi ac prope perniciem ventum est.—LIVY, xxi. 34.

Appendix, No. 8.

General Class Examination.

2. Quos quide mego. si ullo modo fieri possit, non tam ulcisei studeo quam sanare sibi ipsos, placare rei publicae, neque, id qua re fieri non possit, si me audire volent intelligo. Exponam enim vobis, Quirites. ex quibus generibus hominum istae copiae comparentur: deinde singulis medicinam consilii atque orationis meae, si quam potero, adferam. Unum genus est eorum, qui magno in aere alieno maiores etiam possessiones habent, quarum amore adducti dissolvi nullo modo possunt. Horum hominum species est honestissima: sunt enim locupletes: voluntas vero et causa impudentissima. Tu agris, tu aedificiis, tu argento, tu familia, tu rebus omnibus ornatus et copiosus sis et dubites de possessione detrahere, acquirere ad fidem? Quid enim exspectas? bellum? Quid ergo? in vastatione omnium tuas possessiones sacrosanctas futuras putas? An tabulas novas? Errant qui istas a Catilina exspectant: meo beneficio tabulae novae proferentur, verum auctionariae. Neque enim isti, qui possessiones habent, alia ratione ulla salvi esse possunt. Quod si maturius facere voluissent neque, id quod stultissimum est, certare cum usuris fructibus praediorum, et locupletioribus his et melioribus civibus uteremur.—CICERO, *In Cat.* ii. 8.

(*a*) Give the principal tenses of the following verbs:—*circumventus, malle, ratus, coorti, ulcisci, dissolvi.*

(*b*) Explain the constructions *circumspectans sollicitusque omnia* in the first, and *sanare sibi ipsos* in the second extract.

(*c*) *Doctos memorantes . . . acciperet* change to the *oratio directa.*

(*d*) Give the phrase opposed to *aes alienum*. What do you understand by *tabulae novae*, and what by *tabulae auctionariae?* To what measure does Cicero refer under the latter designation? Give historical instances of the application of the former.

Translate into Latin:

1. When thanks had been given to us by the senate, and that report had spread through the city, a sudden rush of the population is made to the senate-house.

2. He himself meanwhile determined to wait in Gaul until he had assigned the quarters of the legions, and fortified the winter camp.

3. I will cheerfully undergo the greatest storm of unpopularity, provided that this danger be averted from my country.

Translate into Latin:

Aristides, while in exile, proved that not he, but those who banished him, were the enemies of the state; for when he ascertained that the Persian fleet was so large that the Greeks could not escape, he went over to Salamis, and reported the fact, in order that they might act to more advantage. This, however, he would never have done, had he thought more of the enmity of Themistocles than of the safety of his country. The Athenians would not permit the increase of the Spartan interest, nor the Spartans that of the Athenians; but, probably, had they known that Philip of Macedon was plotting against their liberties, they would not have suffered his power to increase, but would have combined their forces and taken the field against their common enemy.

HONORS.

Translate, adding brief notes when you think it necessary:

1. At, si quos haud ulla viros vigilantia fugit,
Ante locum similem exquirunt, ubi prima paretur
Arboribus seges et quo mox digesta feratur,
Mutatam ignorent subito ne semina matrem.
Quin etiam coeli regionem in cortice signant,
Ut, quo quaeque modo steterit, qua parte calores
Austrinos tulerit, quae terga obverterit axi,
Restituant: adeo in teneris consuescere multum est.

Appendix, No. 8.

General Class Examination.

Collibus an plano melius sit ponere vitem,
Quaere prius. Si pinguis agros metabere campi,
Densa sere: in denso non segnior ubere Bacchus;
Sin tumulis acclivo solum collesque supinos,
Indulge ordinibus; nec secius omnis, in unguem
Arboribus positis, secto via limite quadret.
Ut saepe ingenti bello quum longa cohortes
Explicuit legio, et campo stetit agmen aperto,
Directaeque acies, ac late fluctuat omnis
Aere renidenti tellus, necdum horrida miscent
Proelia, sed dubius mediis Mars errat in armis:
Omnia sint paribus numeris dimensa viarum,
Non animum modo uti pascat prospectus inanem,
Sed quia non aliter vires dabit omnibus aequas
Terra, neque in vacuum poterunt se extendere rami.
VIRGIL, *Georg.* II. 265–287.

2. AE. Si satis iam debacchatus es, leno audi si uis nunciam.
SA. Egon debacchatus sum autem an tu in me? AE. Mitte ista atque ad rem redi.
SA. Quam rem? quo redeam? AE. Iamne me uis dicere id quod ad te attinet?
SA. Cupio, aequi modo aliquid. AE. Vah, leno iniqua me non uolt loqui.
SA. Leno sum, pernicies communis, fateor, adulescentium.
Periurus, pestis: tamen tibi a me nullast orta iniuria.
AE. Nam hercle etiam hoc restat. SA. Illuc quaeso redi, quo coepisti, Aeschine.
AE. Minis uiginti tu illam emisti? SA. Loqueris. AE. Tibi uortat male.
Argenti tantum dabitur. SA. Quid? si ego tibi illam nolo uendere.
Coges me? AE. Minume. SA. Namque id metui. AE. Neque uendundam censeo.
Quae liberast: nam ego liberali illam adsero causa manu.
Nunc uide utrum uis: argentum accipere an causam meditari tuam.
Delibera hoc, dum ego redeo, leno. SA. Pro supreme Iuppiter,
Minume miror qui insanire occipiunt ex iniuria.
Domo me eripuit, uerberauit: me inuito abduxit meam:
Homini misero plus quingentos colaphos infregit mihi.
Ob malefacta haec tantidem emptam postulat sibi tradier.
Verum enim quando bene promeruit, fiat: suom ius postulat.
Age iam cupio, modo si argentum reddat. sed ego hoc hariolor:
Vbi me dixero dare tanti, testis faciet ilico,
Vendidisse me, de argento somnium: "mox: cras redi."
Id quoque possum ferre, modo si reddat, quamquam iniuriumst.
Verum cogito id quod res est: quando eum quaestum occeperis,
Accipiunda et mussitanda iniuria adulescentiumst.
Sed nemo dabit: frustra egomet mecum has rationes puto.
TERENCE, *Adelphi* II., i. 30–54.

Scan and ictuate the four first lines. Classify the principal metrical licences in the Latin comic poets.

3. Explain the following expressions:—*Alii clanculum patres quæ faciunt; modo quid designavit; feres infortunium; e re natā melius fieri haud potuit; qui alicui rei est; is quamobrem huc veneram; ut captus servolorum est; me indicente; primus obnuntio.*

4. Translate into Latin elegiac verse:

In all my wanderings round this world of care,
In all my griefs—and God has given my share—
I still had hopes my latest hours to crown,
Amidst these humble bow'rs to lay me down;
To husband out life's taper at the close,
And keep the flame from wasting by repose:
I still had hopes, for pride attends us still,
Amidst the swains to show my book-learn'd skill,
Around my fire an evening group to draw,
And tell of all I felt and all I saw;

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And, as a hare whom hounds and horns pursue,
Pants to the place from whence at first she flew,
I still had hopes, my long vexations past,
Here to return—and die at home at last.

SECOND YEAR STUDENTS.

Translate:

Qui, ne tuberibus propriis offendat amicum,
Postulat, ignoscet verrucis illius: aequum est,
Peccatis veniam poscentum reddere rursus.
Denique, quatenus excidi penitus vitium irae,
Cetera item nequeunt stultis haerentia, cur non
Ponderibus modulisque suis ratio utitur, ac res
Ut quaeque est, ita suppliciis delicta coërcet?
Si quis eum servum, patinam qui tollere iussus
Semesos pisces tepidumque ligurrierit ius,
In cruce suffigat: Labeone insanior inter
Sanos dicatur. Quanto hoc furiosius atque
Maius peccatum est: Paulum deliquit amicus;
Quod nisi concedas, habeare insuavis: acerbus
Odisti et fugis ut Rusonem debitor aeris,
Qui nisi, cum tristes misero venere Calendae,
Mercedem aut nummos unde unde extricat, amaras
Porrecto iugulo historias captivus ut audit.

Hor., *Sat.*, i. 3, 73–89.

Diog. "Si pranderet olus patienter, regibus uti
Nollet Aristippus." Arist. "Si sciret regibus uti,
Fastidiret olus, qui me notat." Utrius horum
Verba probes et facta, doce, vel iunior audi,
Cur sit Aristippi potior sententia. Namque
Mordacem Cynicum sic eludebat, ut aiunt:
"Scurror ego ipse mihi, populo tu: rectius hoc et
Splendidius multo est. Equus ut me portet, alat rex,
Officium facio; tu poscis vilia rerum,
Dante minor, quamvis fers te nullius egentem."
Omnis Aristippum decuit color et status et res,
Tentantem maiora, fere praesentibus aequum.
Contra, quem duplici panno patientia velat,
Mirabor, vitae via si conversa decebit.
Alter purpureum non exspectabit amictum,
Quidlibet indutus celleberrima per loca vadet,
Personamque feret non inconcinnus utramque:
Alter Mileti textam cane peius et angui
Vitabit chlamyden, morietur frigore, si non
Retuleris pannum. Refer et sine vivat ineptus!

Hor., *Epist.*, i. 17, 13–32.

(α) Give the principal tenses of the following verbs:—*ignoscet, excidi, semesos, ligurrierit, porrecto, pranderet, suffigat, eludebat.*

(β) Explain the allusions in *Labeone insanior;* in *historias audit;* and in *duplici panno patientia velat.*

(γ) Relate what you know of the lives of the two philosophers mentioned in the second extract.

Translate into Latin the following sentences:

1. By command of Domitius the people of Marseilles dismiss their fleet; they seize upon merchant ships and bring them into the harbour: they devote to public use whatever corn was found: the rest of the merchandise and supplies they reserve for the blockade of the city.

2. At one time I consider what to say, at another time I say it: which two things most men, relying on their ability, do at the same time; but assuredly those very persons would speak considerably better, if they chose for themselves one time for thinking, another for speaking.

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3. The Helvetii set all their towns on fire, about twelve in number, and burnt all their corn, except what they intended to carry with them, in order that, the hope of a return having been taken away, they might be better prepared to encounter all dangers.

Translate into Latin :—

The Senate, however, exulted in the advance it had made, and believed that its path now lay open before it, and that its mortal enemy must soon fall into its hands. Cæsar, on his part, in the midst of the most overwhelming cares and perils of war, kept his eye intently fixed on the progress of affairs in the city and saw that his only hope now lay in the errors of his antagonists. His term of government was approaching its close, whilst his opponents were eager to have it cut short at once. At the moment of its expiration, as soon as he should become once more a private citizen, denuded of office and employment, charges, of malversation would be preferred.

I.—Translate :

1. C. Gracchi frumentaria magna largitio: exhauriebat igitur aerarium: modica M. Octavii et rei publicae tolerabilis et plebi necessaria: ergo et civibus et rei publicae salutaris. In primis autem videndum erit ei, qui rem publicam administrabit, ut suum quisque teneat neque de bonis privatorum publice deminutio fiat. Perniciose enim Philippus in tribunatu, quum legem agrariam ferret, quam tamen antiquari facile passus est et in eo vehementer se moderatum praebuit, sed quum in agendo multa populariter tum illud male, "non esse in civitate duo milia hominum qui rem haberent." Capitalis oratio est, ad aequationem bonorum pertinens, qua peste quae potest esse maior? Hanc enim ob causam maxime, ut sua tenerentur, res publicae civitatesque constitutae sunt. Nam, etsi duce natura congregabantur homines, tamen spe custodiae rerum suarum urbium praesidia quaerebant. Danda etiam opera est ne, quod apud maiores nostros saepe fiebat propter aerarii tenuitatem adsiduitatemque bellorum, tributum sit conferendum, idque ne eveniat multo ante erit providendum. Sin quae necessitas huius muneris alicui rei publicae obvenerit—malo enim alii quam nostrae ominari, neque tamen de nostra, sed de omni re publica disputo,—danda erit opera ut omnes intelligant, si salvi esse velint, necessitati esse parendum.—CICERO, *de Officiis*, ii. 21.

2. Nondum centum et decem anni sunt, quum de pecuniis repetundis a L. Pisone lata lex est, nulla antea quum fuisset. At vero postea tot leges et proximae quaeque duriores, tot rei, tot damnati, tantum Italicum bellum propter iudiciorum metum excitatum, tanta sublatis legibus et iudiciis expilatio direptioque sociorum, ut imbecillitate aliorum, non nostra virtute valeamus.—*Ibid.*

(*a*) Explain the term *antiquo;* give the force of *tamen* in the phrase *neque tamen de nostra;* and point out the peculiarity in the expression, *proximae quaeque duriores.*

(*b*) Mention, with dates, the provisions of the various laws referred to.

(c) What event put an end to the *tributa* at Rome? The Mithridatic war was followed by a further remission of taxation?

(*d*) Explain the allusions in *Italicum bellum propter judiciorum metum excitatum*, and in *sublatis legibus et judiciis.*

II.—Translate :

Nihil est profecto stultius neque stolidius
Neque mendaciloquum neque adeo argutum magis
Neque confidentiloquius neque periurius
Quam urbani adsidui ciues, quos scurras uocant.
Atque egomet me adeo cum illis una ibidem traho:
Qui illorum uerbis falsis acceptor fui,
Qui omnia se simulant scire neque quicquam sciunt.
Quod quisque in animo habet aut habiturust, sciunt:
Sciunt quid in aurem rex reginae dixerit:
Sciunt quod Iuno fabulatast cum Ioue:
Quae neque fuerunt neque sunt, tamen illi sciunt.
Falsone an uero laudent, culpent quem uelint,
Non flocci faciunt, dum illut quod lubeat sciant.
Omnes mortales hunc aiebant Calliclem

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Indignum ciuitate ac sese uiuere,
Bonis qui hunc adulescentem euortisset suis.
Ego de eorum uerbis famigeratorum insciens
Prosului amicum castigatum innoxium.
Quod si exquiratur usque ab stirpe auctoritas,
Vnde quid auditum dicant: nisi id adpareat,
Famigeratori res sit cum damno et malo:
Hoc ita si fiat, puplico fiat bono.
Pauci sint faxim qui sciant quod nesciunt,
Occlusioremque habeant stultiloquentiam.
Plautus, *Trinum.*, i. 2, 199-222.

Explain the following expressions:

Multas res *simitu* in meo corde vorso—
Ab re consulit—
Ibi illa *pendentem ferit*—
Tuas res tibi habeto—
Sarta tecta tua praecepta usque habui—
Illum tibi *ferentarium* esse amicum inventum intelligo—
Sine sacris hereditas.

III.—Translate into Latin lyric verse:

When the British warrior queen,
  Bleeding from the Roman rods,
Sought, with an indignant mien,
  Counsel of her country's gods.

Sage beneath the spreading oak
  Sat the Druid, hoary chief;
Every burning word he spoke
  Full of rage and full of grief.

"Princess! if our aged eyes
  Weep upon thy matchless wrongs,
'Tis because resentment ties
  All the terrors of our tongues.

"Rome shall perish—write that word
  In the blood that she has spilt;
Perish, hopeless and abhorred,
  Deep in ruin as in guilt."

THIRD AND FOURTH YEAR STUDENTS.

Translate, adding brief notes when you think it necessary:

1. Omninoque omnes clari et nobilitati labores continuo fiunt etiam tolerabiles. Videmusne apud quos eorum ludorum, qui gymnici nominantur, magnus honos sit, nullum ab iis, qui in id certamen descendant, devitari dolorem? apud quos autem venandi et equitandi laus viget, qui hanc petessunt, nullum fugiunt dolorem. Quid de nostris ambitionibus, quid de cupiditate honorum loquar? quae flamma est per quam non cucurrerunt ii, qui haec olim punctis singulis colligebant? Itaque semper Africanus Socraticum Xenophontem in manibus habebat: cuius in primis laudabat illud, quod diceret eosdem labores non aeque graves esse imperatori et militi, quod ipse honos laborem leviorem faceret imperatorium. Sed tamen hoc evenit ut in vulgus insipientium opinio valeat honestatis, quum ipsam videre non possint. Itaque fama et multitudinis iudicio moventur, quum id honestum putent, quod a plerisque laudetur.—Cicero, *Tusc. Disp.* ii. 26.

2. Haec fere hoc tempore putavi esse dicenda. Sed tu fortasse in sententia permanes.

A. Minime vero, meque biduo duarum rerum, quas maxime timebam, spero liberatum metu.

M. Cras ergo ad clepsydram: sic enim duximus, et tibi hoc video non posse deberi.

A. Ita prorsus. Et illud quidem ante meridiem, hoc eodem tempore.

M. Sic faciemus tuisque optimis studiis obsequemur.

Ibid, ii. 27.

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3. Est praeclara epistola Platonis ad Dionis propinquos, in qua scriptum est his fere verbis: "Quo quum venissem, vita illa beata, quae ferebatur, plena Italicarum Syracusiarumque mensarum, nullo modo mihi placuit, bis in die saturum fieri nec umquam pernoctare solum caeteraque quae comitantur huic vitae, in qua sapiens nemo efficietur umquam, moderatus vero multo minus. Quae enim natura tam mirabiliter temperari potest?" Quo modo igitur iucunda vita potest esse, a qua absit prudentia, absit moderatio? Ex quo Sardanapalli, opulentissimi Syriae regis, error agnoscitur, qui incidi iussit in busto:

Haec habeo, quae edi quaeque exsaturata libido
Hausit: at illa iacent multa et praeclara relicta.

—Quid aliud, inquit Aristoteles, in bovis, non in regis sepulcro inscriberes? Haec habere se mortuum dicit, quae ne vivus quidem diutius habebat quam fruebatur.—*Ibid.* v. 35.

Translate into Latin:

My conviction and my opinion is this, that, as there are so many arts, so many sciences, so many inventions, such rapidity of thought, such recollection of the past and such memory of the future, the principle which involves all these cannot be mortal; and that as the mind is in perpetual motion, and admits no external cause of that motion, because it moves itself, it can never cease its motion, because it can never part from itself. Since, also, the constitution of the mind is uniform, and contains no foreign or heterogeneous element, it can never divide itself; and as it cannot do this, it can never die; and the circumstance that children, even while learning difficult branches of knowledge, seize upon their numberless details so quickly that they seem not so much to bear them for the first time as to recall and recollect them, is a satisfactory proof that man possesses much knowledge before his birth. Such is the doctrine of our friend Plato.

Translate, adding brief notes when you think it necessary:

1. Quartum idus Ianuarias, foedum imbribus diem, tonitrua et fulgura et caelestes minae ultra solitum turbaverant. observatum id antiquitus comitiis dirimendis non terruit Galbam quo minus in castra pergeret, contemptorem talium ut fortuitorum: seu quae fato manent, quamvis significata, non vitantur. apud frequentem militum contionem imperatoria brevitate adoptari a se Pisonem more divi Augusti et exemplo militari, quo vir virum legeret pronuntiat. ac ne dissimulata seditio in maius crederetur, ultro adseverat quartam et duoetvicensimam legiones, paucis seditionis auctoribus, non ultra verba ac voces errasse et brevi in officio fore. nec ullum orationi aut lenocinium addit aut pretium. tribuni tamen centurionesque et proximi militum grata auditu respondent: per ceteros maestitia ac silentium, tanquam usurpatam etiam in pace donativi necessitatem bello perdidissent.—TACITUS, *Hist.* i., 18.

Explain the use of *tanquam* in the last sentence.

2. Munia imperii Caecina ac Valens obibant, olim anxii odiis, quae bello et castris male dissimulata pravitas amicorum et fecunda gignendis inimicitiis civitas auxerat, dum ambitu comitatu et immensis salutantium agminibus contendunt comparanturque, variis in hunc aut illum Vitellii inclinationibus: nec umquam satis fida potentia, ubi nimia est; simul ipsum Vitellium, subitis offensis aut intempestivis blanditiis mutabilem, contemnebant metuebantque. nec eo segnius invaserant domos hortos opesque imperii, cum flebilis et egens nobilium turba quos ipsos liberosque patriae Galba reddiderat, nulla principis misericordia iuvarentur. gratum primoribus civitatis etiam plebs adprobavit, quod reversis ab exilio iura libertorum concessisset, quamquam id omni modo servilia ingenia corrumpebant, abditis pecuniis per occultos aut ambitiosos sinus, et quidam in domum Caesaris transgressi atque ipsis dominis potentiores.—*Ibid.* ii., 92.

3. Explain the following passages:

Procurationes alii et interiorem potentiam [adepti sunt]. Describe the administrative machinery of the several provinces.

Inde ad miliarium aureum pergit.

Repetundarum criminibus sub Claudio ac Nerone ceciderant: placuit ignoscentibus verso nomine, quod avaritia fuerat, videri majestatem, cujus tum odio

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etiam bonæ leges peribant. What is the full designation of the crime here called *majestas?* Point out the successive modifications which the law of treason underwent.

Fuere qui proficiscenti Othoni moras religionemque nondum conditorum ancilium adferrent.

"Precibus et igne puro altaria adolentur.

Othoni sepulchrum exstructum est modicum et mansurum.

Magna et misera civitas, eodem anno Othonem et Vitellium passa, inter Vinios Fabios Icelos Asiaticos varia et pudenda sorte agebat. The names here used are representative.

Modern Languages.—*Examiner, Professor Meissner.*

FIRST YEAR STUDENTS.

Translate into English:

I.—On a longtemps discuté sur la durée probable de la vie humaine; et les *moyennes* que la science èt la statistique en ont données tour à tour ont varié suivant les époques. "En général, disait Voltaire, l'âge commun auquel l'espèce humaine est rendue à la terre, dont elle sort, est de vingt-deux à vingt-trois ans tout au plus, selon les meilleurs observateurs. De mille enfants nés dans une même année, les uns meurent à six mois, les autres à quinze; celui-ci à dix-huit ans, cet autre à trente-six, quelques-uns à soixante; trois ou quatre octogénaires, sans dents et sans yeux, meurent après avoir souffert quatre-vingts ans. Prenez un terme moyen: chacun a porté son fardeau vingt-deux ou vingt-trois années." Ainsi vingt-deux ans en moyenne, voilà ce que Voltaire accordait à l'humanite il y a un siècle. Il est vrai qu'il en parlait bien à son aise. Quand il marquait ainsi la limite de la vie humaine, Voltaire approchait de quatre-vingts ans, et il n'avait jamais eu plus d'esprit. De son côté Buffon disait, presqu'au même temps, que la vieillesse est *un préjugé*; que si nous nous sentons vieillir, c'est la faute de *notre arithmétique.* "L'homme qui ne meurt pas de maladie, ajoutait-il, vit partout quatre-vingt-dix ou cent ans."—CUVILLIER-FLEURY.

Translate into French;

II.—My sister and brother are attentive. Bring me some hot water. I am pleased with your answer. Why have these soldiers been punished? Because they have deserved it. Which are the most useful animals? Horses, oxen, asses and sheep. Why do you prefer this book to mine? Because it is better written. Is Paris as large as London? No; London is the largest town in the world. How is your brother? He is very well.

III.—The mind of Frederic William was so ill regulated, that all his inclinations became passions, and all his passions partook of the character of moral and intellectual disease. His parsimony degenerated into sordid avarice. His taste for military pomp and order became a mania, like that of a Dutch burgomaster for tulips.—MACAULAY.

IV.—A very curious circumstance took place in the kingdom of Denmark, in the middle of the last century, relative to the infliction of capital punishments upon malefactors. They were attended from the prison to the place of execution by priests, accompanied by a very numerous procession, singing psalms, etc.: which ended, a long discourse was addressed by the priest to the culprit, who was hung as soon as he had heard it. This spectacle, and all the pious cares bestowed upon the criminals, so far seduced the imaginations of the common people, that many of them committed murder purposely to enjoy such inestimable advantages, and the government was positively obliged to make hanging dull as well as deadly, before it ceased to be an object of popular ambition.—SYDNEY SMITH.

V.—(*a*) Give the 2nd pers. pl. pres. indic. of *dire, valoir, changer, se souvenir faire, mourir.*

(*b*) The 3rd pers. sing. prét. } of the same verbs.
(*c*) The 1st pers. pl. fut. }

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General Class Examination.

Translate into English:

I.—Indem, wie ich mich ſo umſehe, kommt ein köſtlicher Reiſewagen ganz nahe an mich heran; der mochte wohl ſchon einige Zeit hinter mir drein gefahren ſein, ohne daß ich es merkte, weil mein Herz ſo voller Klang war, denn es ging ganz langſam, und zwei vornehme Damen ſteckten die Köpfe aus dem Wagen und hörten mir zu. Die eine war beſonders ſchön und jünger als die andere, aber eigentlich gefielen ſie mir alle beide. Als ich nun aufhörte zu ſingen, ließ die ältere ſtill halten und redete mich holdſelig an: „Ei luſtiger Geſell, Er weiß ja recht hübſche Lieder zu ſingen."—Eichendorff.

II.—Als die Latiner aus Lavinium
Nicht mehr dem Sturm der Feinde hielten Stand,
Da hoben ſie zu ihrem Heiligthum,
Dem Speer des Mavors, flehend Blick und Hand.

Da ſprach der Prieſter, der die Lanze trug:
„Euch künd ich ſtatt des Gottes, der euch grollt:
„„Nicht wird er ſenden günſtigen Vogelflug,
Wenn ihr ihm nicht den Weihefrühling zollt.""

„Ihm ſei der Frühling heilig!" rief das Heer,
„Und was der Frühling bringt, ſei ihm gebracht!",
Da rauſchten Fittiche, da klang der Speer,
Da ward geworfen der Etruſker Macht.

Uhland.

Translate into German:

III.—Do you learn German? What would you say, if he asked you? The enemy has bombarded the town. I have not met him anywhere. Have you seen him? We have drunk two kinds of wine. I have been four times in Germany. The prince thanked most graciously. He lives on the other side of the river. It struck seven when we arrived in town. A little garden is before the house. Lend me your grammar, I have mislaid mine. When do you rise? I generally rise at seven o'clock. May I use your pen? What am I to do? All men must die. Our rich neighbour has a numerous family. Has he sung this new song?

IV.—(*a*) Give the inf., imperf., and past part. of *to know* (2), *to carry*, *to fly*, *to succeed*, *to enjoy*.

(*b*) Decline Mein guter Vater, das kleine Kind.

(*c*) Explain and exemplify the construction of the verbs of mood.

SECOND YEAR STUDENTS.

Translate into English:—

I.—M. Dumas a trop écrit, c'est là le plus grand de ses torts littéraires, et on se trouve ici amené à toucher au défaut de l'homme et plus encore du temps, parce qu'il a été la source des défauts de l'écrivain. Cet auteur a été trop de son siècle, il a eu de trop vastes besoins. Ne faut-il pas mener la grande vie, bâtir des châteaux, donner des dîners à grands spectacles, fonder des théâtres, voyager en Espagne, naviguer vers l'Afrique, jeter l'argent par les croisées pour en finir plus vite? Par suite, au lieu de faire servir l'art au triomphe de la vérité, ce qui est le but des grandes âmes; au lieu même de faire de l'art pour l'art, ce qui rend encore l'esprit difficile sur ses propres œuvres, ne faut-il pas faire de l'art pour de l'argent, ce qui est la pire des conditions du travail intellectuel? Etre tout à tous, écrire sur toute chose et à toute heure, rédiger aujourd'hui les mémoires d'un maréchal de France, demain un feuilleton sur la Ligue, après demain le récit d'un épisode de guerre civile, et, avant la fin de la journée, passer à un roman moderne, sauf à ébaucher pendant la nuit une pièce de théâtre; être obligé de mettre un prix vénal à chaque minute de son temps; réaliser le miracle de l'ubiquité littéraire, en tendant toutes les facultés de son esprit vers la solution de cet unique problème: "Gagner, le plus rapidement possible, la plus grosse somme d'argent," condition excellente pour produire beaucoup de livres, détestable pour produire de bons livres!—NETTEMENT.

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Translate into French:—

II.—The most absurd notions were entertained in England respecting the wealth of India. Nobody seemed to be aware of what, nevertheless, was most undoubtedly the truth, that India was a poorer country than countries which in Europe are reckoned poor, than Ireland, for example, or than Portugal.—MACAULAY.

III.—Enormous crimes are not subjects on which it is desirable to stimulate curiosity, and had the assassination of Darnley been no more than a vulgar act of wickedness, had the mysteries connected with it, and the results arising from it, extended only to the persons, the motives, and the escape or punishment of the perpetrators or their accessories, it might have remained a problem for curious speculation, but it would neither have deserved nor demanded the tedious attention of the historian. Those events only are of permanent importance which have either affected the fortunes of nations, or illustrated, in some signal manner, the character of the epochs at which they have occurred.—J. A. FROUDE.

IV.—(*a*) Give a summary, in French, of either Corneille's *Cid*, or *L'Avare* of Molière.

(*b*) Give an account of Boileau.

Translate into English:—

I.—Man darf die Thatſache nicht verkennen, daß ſeitdem Carl IV ſeinen Sitz in Böhmen aufgeſchlagen, mehr als ein Jahrhundert lang kein Kaiſer mit eigenthümlicher Kraft im Reiche auftrat. Von Carls Nachfolger Wenzlaw hat man es in Deutſchland eine geraume Zeit hindurch gar nicht erfahren daß ihn die Böhmen gefangen hielten; ein einfaches Decret der Churfürſten reichte hin, ihn abzuſetzen. Ruprecht von der Pfalz entgieng wohl nur durch den Tod einem ähnlichen Schickſal. Als derjenige Fürſt, welcher nach mancherlei Wahlentzweiungen den Platz behielt, Siegmund von Luxenburg, vier Jahre nach ſeiner Wahl endlich im Reiche erſchien, um ſich krönen zu laſſen, fand er ſo wenig Theilnahme, daß er einen Augenblick im Begriff war, unverichteter Dinge nach Ungern zurückzugehn.

Ranke.

II.—Es geſchehn noch Wunder—eine weiße Taube
Wird fliegen und mit Adlerskuhnheit dieſe Geier
Anfallen, die das Vaterland zerreißen.
Darniederkämpfen wird ſie dieſen ſtolzen
Burgund, den Reichsverräther, dieſen Talbot,
Den himmelſtürmend hunderthändigen,
Und dieſen Sal'sbury, den Tempelſchänder,
Und dieſe frechen Inſelwohner alle
Wie eine Heerde Lämmer vor ſich jagen.
Der Herr wird mit ihr ſeyn, der Schlachten Gott.
Sein zitterndes Geſchöpf wird er erwählen,
Durch eine zarte Jungfrau wird er ſich
Verherrlichen, denn er iſt der Allmächt'ge!

Schiller.

Translate into German:—

III.—I should like to know it. Do you like red wine better than white? *Are you sure* you have considered well what you advise me? I am just writing to my cousin. You succeed in everything. We were preparing for the journey, when we received the news of the sudden death of a near relation. A statue of marble has been erected to the memory of the poet.

IV.—Cortes was a man of insatiable activity. It might have been thought that, after the conquest of Mexico, the rebuilding and repeopling of the city would have sufficiently exhausted the energies even of that active man. But it was not so. He is chiefly known to the world by that conquest of Mexico, which, for its audacity, stands unrivalled in the annals of mankind; but he was subsequently employed in further conquests, which cost him far more labour

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and suffering, but have hardly added at all to his renown, so little time and thought can men spare for a thorough investigation of the lives and deeds of even their most remarkable fellowmen.—Helps, *Hist. Conq.*, iii. 236.

THIRD YEAR STUDENTS.

I. Translate into French:—

The philosophy of history, which resolves events into the action of organic and necessary laws, conceals from us the perplexities of the living instruments by which those events were brought about. We see what actually happened; we imagine that we discern the causes which determined the effects; and, in assuming a necessary connexion between them, we smile at the needless fears, we ridicule the needless precautions of kings and ministers; we despise them as short-sighted; we censure them as arbitrary and tyrannical; failing to perceive, or else failing to acknowledge, that if the results were inevitable, the characters which assisted to produce those results were inevitable also. By a subtle process of intellectual injustice, we convert the after-experience of facts into principles of reasoning which would have enabled us to foresee those facts; and we infer, with unconscious complacency, the superiority of modern intelligence. "Knowledge of the result," a wise man once observed, "has spoilt the composition of history." A just moral appreciation of character is made impossible by it. The remedy, so far as there is a remedy, is to look wherever we can through the eyes of contemporaries from whom the future was concealed.—J. A. FROUDE.

II.—Write a philological commentary on the following passage:—

Au tans jadis ancienor
Ert li siecles de grant valor,
Et li roi et li emperere
Faisoient chiere et bel here
Et tenoient ferme justise
Sans lo ier et sans convoitise;
Chevalerie n'ert pas morte . .
Chà en arrière estoit uns rois
Ki mult ert sages et cortois
Et prist feme gentil pucele,
Fille à un roi, qui mult fu bele.
Ensanle furent longement;
Et bien et bel et loiaument
Li uns à l'autre bien se tint.
Or oies comment lor avint:

III.—(*a*) Give an account, in French, of the *Les Serments de Strasbourg*, *La Cantilène de S^{te} Eulalie*, and the *Fragment de Valenciennes*.

(*b*) Explain the chief difference between the Old and Modern French Declension.

(*c*) State Grimm's Law as applied to the Romance languages, and compare the permutations, especially of the Mutae, with the corresponding changes in the Teutonic languages.

Translate into English:—

I.—Endliche rſchien der Pfarrer in bürgerlicher Kleidung, er bielt die ſchwarzeingebundene Bibel und das Meßbuch mit der linken Hand auf die Bruſt gedrückt; geſenkten Blickes, ohne aufzuſchauen, ſchritt er durch die Verſammelten, die ſich vor ihm zertheilten; plötzlich ſchien ein Entſchluß ſeinen Schritt zu hemmen, er warf ſeiner Gewohnheit nach den Kopf nach hinten, richtete das Antlitz aufwärts und ſchloß die Augen. Von allen Seiten wurde Stille gerufen und der Pfarrer ſprach:

„Meine lieben Chriſten!" die Stimme ſchien ihm zu ſtocken, man ſah, er arbeitete mit aller Macht um Athem, nur zu den nächſten Umſtehenden ſagte er: „Ich bitte um Geduld, ich werde mich gleich faſſen." Man hörte es indeß allerwärts, und nach einer Weile fuhr er laut fort, die Hand hoch emporſtreckend.—Auerbach.

Appendix, No. 8.

General Class Examination.

Translate into German:—

II.—Negro slavery, in theory, was an invention of philanthropy,—like the modern Coolie trade, an unobjectionable and useful substitute for the oppression of races to whom loss of freedom was death; yet with the fatal blot in the design, that the consent of the negroes themselves, who were so largely interested in the transaction, was neither sought nor obtained. The original and innocent pretext. which confined the purchase to those who had offended against the negro laws. melted swiftly before the increase of the demand; the beads, the scarlet cloaks and ribands which were fluttered in the eyes of the chiefs, were temptations which savage vanity was unable to resist; they sold their own people; they made war on one another to capture prisoners, which had become a valuable booty; and the river mouths and harbours, where the Portuguese traders established their factories, were envenomed centres from which a moral pestilence crept out among the African races. The European first converted the negro into a savage, and then made use of his brutality as an excuse for plunging him into slavery.—J. A. FROUDE.

III.—Write, in German, a short account of Goethe's life at Leipzig and Strassburg.

HISTORY.—*Professor Yonge.*

QUESTIONS.

1. Give a very brief account of Simon de Montfort (the grandson), of Etienne Marcel, of Lord Clarendon, and of the Duke of Marlborough.

2. What statutes were passed by our Plantagenet Kings, and what by the French Kings of the 13th and 14th centuries, to limit the temporal power of the Pope in their respective dominions?

3. What French King established the States General, and what was the power of that body?

4. What was the composition and power of the French Parliament?

5. Give a brief account of the Battles of Sluys, of Marston Moor, and of the Nile.

6. Give a brief account of the Petition of Rights, and of the Bill of Rights, mentioning those statesmen who bore the chief part in the framing of each.

7. What was the object of the Exclusion Bill?

8. Give a brief account (not exceeding one page) of any event which has made the greatest impression on your mind or fancy in the periods of either English or French history which have been the subjects of the lectures of this session.

MATHEMATICS.—*Professor Purser.*

FIRST YEAR STUDENTS.

ALGEBRA.

1. Solve the equations $\frac{x-2}{2}+\frac{x-3}{3}+\frac{x-4}{4}=1.$

$$\left.\begin{aligned} x+\frac{y}{2}&=\frac{19}{2} \\ y-\frac{x}{2}&=\frac{3}{2} \end{aligned}\right\}$$

2. Define an arithmetic series and a geometric series. Place three arithmetic means between 5 and 10, and three geometric means between 2 and 162.

3. Shew that if a be a value of x which satisfies the equation $x^2+px+q=0$, the left hand member of that equation is divisible without a remainder by $x-a$.

4. Solve the equations $x+\frac{1}{x}=\frac{13}{6}$, $x+\sqrt{x+2}=\frac{7}{4}$.

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General Class Examination.

5. Prove that if $x^m x^n = x^{m+n}$ for all values of m and n, x^{-1} and $x^{\frac{1}{3}}$ must denote $\frac{1}{x}$ and $\sqrt[3]{x}$.

6. Prove that $\log (xy) = \log x + \log y$. Given $\log 2 = \cdot 30103$; $\log 3 = \cdot 47712$; find $\log 6$, $\log 30$, and $\log \frac{27}{64}$.

7. Given $\cos 2\,\theta + m \sin 2\,\theta = \cos \theta + \sin \theta$, find $\tan \theta$.

8. Shew that if $x + y$ is given; $x^p y^q$ is greatest when $\frac{x}{p} = \frac{y}{q}$, when x, y, p, q, are all positive quantities.

9. Find the condition that $a\,x^2 + b\,x + c = 0$, $a'x^2 + b'x + c' = 0$ should have a common root.

10. Prove Fermat's theorem—that if n be a prime number, and N prime to n, $N^{n-1} - 1$ is divisible by n.

11. Assuming the series for e^x, investigate the series for $\log_e (1 + x)$. Calculate to three decimal places log 2 in the Naperian system.

12. Give the series $A - B + C - D +$ &c.: shew that if the successive terms A, B, C, &c., and also their successive differences $A - B$, $B - C$, &c., diminish continuously and indefinitely the series converges to a limit lying between $\frac{1}{2}$ A and $A - \frac{1}{2}B$.

13. A given number of students take their places at random in an examination hall which exactly holds them. The examination consists of a morning and an afternoon session. What is the probability that at least one of the students occupies in the afternoon the same place he did in the morning.

14. Investigate in what degree the result of eliminating x between two equations contains the co-efficients of each. Discuss briefly some of the different methods by which this elimination may be effected.

CONIC SECTIONS.

[The propositions to be proved Geometrically.]

1. The external angle between two tangents at a parabola is equal to the angle which either of them subtends to the focus.

2. The locus of the middle points of a system of parallel chords of a conic is a right line.

3. Ordinates drawn from the same point in the axis to the ellipse and auxiliary circle bear to one another a constant ratio.

4. If a variable point on a conic be joined to four fixed points the anharmonic ratio of the pencil is constant.

5. A perpendicular S Y let fall from the focus S upon a tangent to an ellipse, bears a fixed ratio to the distance of Y from the foot of the corresponding directrix.

6. Prove that the locus of the centre of a circle touching two given circles, one of which lies inside the other, is an ellipse of which the centres of the given circle are the foci.

GEOMETRY AND TRIGONOMETRY.

1. If a tangent be drawn to a circle, and through the point of contact a chord be drawn cutting the circle, the angles which the chord makes with the tangent are equal to the angles in the alternate segments.

2. About a given circle to describe a triangle equiangular with a given triangle.

3. Triangles having the same altitude are to one another as their bases.

4. Prove that $\cos (A + B) = \cos A \cos B - \sin A \sin B$. Hence calculate $\cos 75°$.

5. Give $\tan A = -\frac{3}{4}$, find $\sin A$, $\cos A$, and $\tan 2A$.

6. Assuming the formula for the cosine of an angle of a triangle in terms of the sides, prove that $\cos \frac{A}{2} = \sqrt{\frac{s.\,(s-a)}{b\,c}}$

Appendix, No. 8. — General Class Examination.

7. I observe that the angle of elevation of the top of a tower is 23°, and in moving a hundred feet nearer that its angle of elevation is 31°; calculate the heighth of the tower.

$$L \sin 23^\circ = 9{\cdot}59188 \qquad L \sin 31^\circ = 9{\cdot}71184$$
$$L \sin 8^\circ = 9{\cdot}14356 \qquad \log 144.60 = 2{\cdot}16016$$

8. Show that to draw a triangle which shall be at the same time inscribed in one given circle and circumscribed to another, is either indeterminate or impossible.

9. A line is drawn through a given point across the legs of a given angle, find the relation which subsists between its segments.

10. Assuming De Moivre's theorem, investigate the series for $\sin \theta$ in terms of θ.

11. Prove the formula $\frac{\pi}{4} = 4 \tan^{-1} \frac{1}{5} - \tan^{-1} \frac{1}{239}$ apply it to calculate π to 5 places of decimals.

12. Prove that $\log \sin \theta = \log \theta + \frac{1}{3} \log \cos \theta$ approximately when θ is a small arc. Explain the use Maskelyne made of this formula.

13. Sum the series—

$$\frac{1}{\sin x} + \frac{1}{\sin 2x} + \frac{1}{\sin 4x} \text{ to } n \text{ terms.}$$

14. Given $a \cos \theta - b \cos \phi$, prove that $a \sin \theta + b \sin \phi$ is greatest when $\theta + \phi = \pi$. Apply this to find the quadrilateral of given sides and maximum area.

15. Find trigonometric expressions for the three roots of the equation $x^3 - 9x - 9 = 0$.

SECOND YEAR STUDENTS.

ANALYTICAL GEOMETRY, &c.

1. Explain by a diagram the position of the lines whose equations referred to rectangular co-ordinates are respectively $2x - 3y = 6$; $x + 5y = 5$. Find the tangent of the angle between them.

2. Investigate the equation of a circle whose radius $= 3$, and which touches the axis of x at the origin.

3. Find the equation of the tangent to the circle $x^2 + y^2 = r^2$ at the point $x'y'$. Show from the form of the equation that the tangent is perpendicular to the radius. Prove that the same equation represents the polar when the point $x'y'$ is not on the circle.

4. Find the condition that the line—

$$\frac{x}{A} + \frac{y}{B} = 1 \text{ touch the ellipse } \frac{x^2}{a^2} + \frac{y^2}{b^2} = 1.$$

5. Investigate the condition that the general equation of the second degree represent a pair of right lines.

6. Find in trilinear co-ordinates the equation of the circle circumscribing the triangle $\alpha \beta \gamma$. Interpret the equation geometrically.

7. Find the locus of the middle points of the portions of tangents to an ellipse intercepted by the axes of the curve.

8. Investigate by the method of infinitesimals the direction of the tangent (1) of an ellipse (2) of a curve the locus of a point such that the rectangle under its distances from two fixed points is constant.

9. Examine the condition that the line—

$x \cos a + y \sin a = p$ cut the conic $\frac{x^2}{a^2} + \frac{y^2}{c^2} = 1$ at one of its intersections at an angle ω.

10. Find the ellipse of greatest eccentricity for which it is possible to draw two normals at right angles meeting on the curve.

11. Prove that in an ellipse the parameter of the most closely osculating parabola at any point varies inversely as the cube of the central radius vector.

DIFFERENTIAL AND INTEGRAL CALCULUS.

Appendix, No. 8.

General Class Examination.

1. Investigate from first principles

$$\frac{d}{dx}(x^5) \qquad \frac{d\cos x}{d\,x} \qquad \frac{d}{dx}\left(\frac{1}{x}\right)$$

2. Differentiate

$$\log(1+x^2) \qquad \tan^{1-}(e^x) \qquad \sqrt{x^2-a^2}$$

3. Prove that $u=2x^3-9x^2+12x$ is a maximnm when $x=1$, and a minimum when $x=2$.

4. Find the limiting value of $\dfrac{a^x-a^{-x}}{\sin x+\tan x}$ when $x=0$.

5. Prove that $\dfrac{d^n}{dx}(e^{ax}\cos b\,x)=(a^2+b^2)^{\frac{n}{2}}\cos(b\,x+n\,\phi)\,e^{ax}$ when $\phi=\tan^{-1}\dfrac{b}{a}$.

6. Apply the differential calculus to the solution of the following problem: two lines containing a given angle revolve round their point of intersection, in what position is the area of the quadrilateral they form with two other fixed lines greatest or least?

7. Find the envelope of the line $\dfrac{x}{m}+\dfrac{y}{n}=1$ when m and n are subject to the condition $\dfrac{1}{m^2}+\dfrac{1}{n^2}=\dfrac{1}{c^2}$.

8. Apply Maclaurin's theorem to the expansion in a series of $\log(1+x)$ and of $\sin x$.

9. Prove the expression for the radius of curvature—

$$\mathrm{R}=\frac{\left\{u^2+\left(\frac{d\,u}{d\,\theta}\right)^2\right\}^{\frac{3}{2}}}{u^3\left(u+\frac{d^2\,u}{d\,\theta^2}\right)} \text{ where } u=\frac{1}{r}.$$

Apply this formula to the curve $u=a\,(e^{\theta}+e^{-\theta})$.

INTEGRAL CALCULUS.

1. Required the following integrals:—

$$\int\frac{d\,x}{4+x^2} \qquad \int\frac{d\,x}{\sqrt{3+x^2}} \qquad \int\frac{d\,x}{x^2-9}$$

2. Prove that the volume of a cone is one-third of the volume of the cylinder having the same base and the same altitude.

3. Required—

$$\int\frac{d\,x}{(1-x^2)^{\frac{3}{2}}} \qquad \int\frac{d\,x}{1+2\sin x} \qquad \int\frac{x^2\tan^{-1}x.\,d\,x}{1+x^2}$$

4. Investigate under what circumstances

$\int x^{m-1}(a+b\,x^n)^{\frac{p}{q}}\,d\,x$ can be reduced to a rational form.

5. Obtain a formula of reduotion for the integral

$$\int\frac{dx}{x^m\sqrt{a^2-x^2}}.$$

6. Find the whole area comprised by the evolute of the ellipse.

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General Class Examination.

NATURAL PHILOSOPHY—*Examiner, Professor Stavelly.*

SECOND YEAR ARTS AND FIRST YEAR ENGINEERING.

NATURAL PHILOSOPHY (PASS).

1. Explain what is meant by "the inertia" of a body, what distinguishes that property from the weight or gravity of the body, and state the experimental proofs that matter is inert.

2. Describe the three states in which matter is found to exist. Exemplify these three states in the case of mercury.

3. Describe the pneumatic trough. Explain its use to the chemist, and state how a gas contained in its receiver is brought to its constitution under atmospheric pressure,

4. Explain what is meant by the centre of gravity of a body, and state the position of the centre of gravity of a uniformly dense pyramid, and of a cone.

5. Explain what description of motion can alone be communicated to a perfectly free body by a force whose direction passes through its centre of gravity, and give your reasons for what you assert.

6. Describe the Stanhope combination of levers, and state the two chief advantages obtained by its use.

7. Describe Attwood's machine. Explain how by it bodies are experimentally shewn to have inertia, and how by it the two leading propositions regarding falling bodies are proved experimentally.

8. State the distinction between the simple and the compound pendulum, and enunciate the law of the pendulum.

9. Explain why the accelerating force of gravity is not of the same amount at all parts of the surface of the earth, and state how it is found to vary.

10. Explain what is exactly meant when we assert that the free surface of a heavy liquid must be everywhere on the same hydrostatic level, and describe the experimental proof of this truth.

11. Explain how it is experimentally proved that air has weight, and describe the method of determining the specific gravity of an air or gas.

12. Explain the physical distinction between water at 212° Fahrenheit, and steam or vapour of water at the same temperature, and under standard atmospheric pressure.

SECOND YEAR ARTS AND SECOND YEAR ENGINEERING.

NATURAL PHILOSOPHY (HONORS.)

1. Prove that if the moments of two forces applied together to the same point of any body be equal and opposite with respect to any point in the plane of those forces, the line which joins the point of application of these forces with that latter point is the direction of the equivalent of these forces taken in the same direction as that in which the forces act.

2. Define the constituent forces of a couple, the arm of a couple, the moment of a couple, and the axis of a couple.

3. Prove that a couple acting on any rigid body may be transferred, with an equivalent effect, to any plane in that body parallel to its own plane.

4. Enunciate the theorem by which the position of the centre of gravity of a body of given form, dimensions, and constitution as to density, may be determined algebraically. Demonstrate its truth, and explain how it is applied.

5. Deduce the formula which gives the relation between the accelerating force of gravity at any part of the earth, the distance fallen through small ranges from rest, and the time occupied in describing those spaces from rest.

6. Show that a heavy body would describe any smooth cord of a vertical circle which is coterminous with its vertical diameter in the same time that it would fall freely down that vertical diameter.

7. Deduce the formula by which the length of a pendulum of given form, dimension, constitution as to density, and oscillating on a given axis of suspension is determined.

8. State the property of the centre of oscillation of a pendulum by which the

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General Class Examination.

length of a given pendulum can be most easily determined. Prove that property, and show how by the aid of such a pendulum the accelerating force of gravity at any place on the earth's surface can be obtained experimentally.

9. Prove that the total pressure exerted upon any surface, plane or curved, is equal to the weight of a column of fluid of the same constitution as to density from bottom to top, whose base is the surface pressed, and whose height is equal to the depth at which the centre of gravity of that surface is below the free surface of the fluid.

10. Write down the formula which expresses the specific gravity of a rigid body of less specific gravity than standard water. Explain its terms and prove its truth.

11. Explain fully the method by which Kepler deduced from the observations of Tycho Brahe that each of the planets describes round the sun, in its own periodic time, an orbit very nearly an ellipse, the sun occupying one of its foci.

12. Explain what astronomers mean by "The Parallax" of a comparatively near celestial body. Define the "Horizonal Parallax," the "Diurnal Parallax," the "Parallax in Latitude," and the "Annual Parallax," and write down and prove the formula which gives the relation between the parallax, the apparent zenith distance, and the linear distance of the object and the observer from the centre of the earth.

THIRD YEAR ENGINEERING AND COATES' PRIZE.

NATURAL PHILOSOPHY APPLIED.

1. Enumerate the three classes to which all the resistances requiring to be overcome by machinery have been reduced, and specify the subdivisions of the second and third class.

2. To which of these subdivisions does the resistance opposed to the punching of holes in boiler plates belong? And what is the law which governs the amount of that resistance in different species of plates, and of various thicknesses and sized holes?

3. Enumerate the three laws of friction, and show that the third is a necessary consequence of the first and second as soon as their truth has been proved experimentally.

4. State the simplest method of determining by experiment the co-efficient of friction for any two surfaces that are required to work together, and prove the soundness of the method.

5. Investigate the mechanical aid a wheel gives to a force acting at its centre, parallel to the road, to enable it to lift the weight it carries over small obstacles. Point out the two limits to its aid, and show how the lower limit leads us to the aid it gives in overcoming friction of rolling.

6. Explain how the static (or dead pull) force of an animal can be experimentally determined, and how the dynamic force of the same animal is determined; and give the two formulas which have been proposed for expressing the relation of the magnitudes involved in the latter, together with the names of their respective proposers.

7. A rectangular block of freestone, whose specific gravity is 2·236, length 12 feet, breadth and depth 3 feet each, find the number of units of work expended in turning it over from lying horizontally on one of its long faces to one of its square ends.

8. A railway train, which has been proved when travelling through the air at the rate of 10 miles an hour, to be resisted by the air with a force equivalent to 30 lbs., and the united carriages of which weigh 80 tons. It is required to find the horse-power of the engine which causes it to travel at the rate of 40 miles per hour on a level rail.

9. A tilt-hammer which weighs 3 cwt. and is lifted 3·25 feet each lift, of which 70 take place in a minute, it is required to find the horse-power of the engine expended in working that hammer.

10. An engine of 6 horse-power raises 40 cwt. of coal per hour from a pit 250 fathoms deep, and at the same time works a forge hammer which makes 30 lifts per minute, each lift being 2·5 feet, find the weight of the hammer.

11. State the three most important improvements which Watt introduced into

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the steam engine, as it was when he began his researches connected with it: and explain the leading advantages gained by each of them.

12. Explain the advantage gained by using steam expansively; point out the chief differences between the working of the Cornish Engine and the Crank Engine, and how the difficulty of using steam expansively with the latter is overcome.

(HONORS.)

13. Deduce a formula which would include all such questions as 9 and 10 (above) as particular examples, and at the same time might be used for calculating the value of any one of the magnitudes involved in such questions, which admit of being varied; when the particular values of all the others are given in a particular case.

14. Find the working velocity which will enable a given animal to perform the maximum of work, taking successively each of the formulæ referred to in No. 6 (above) as your guide.

15. Write down the formula which gives the gross work performed by a given stream of water moving with a given velocity perpendicularly against the float-boards of an undershot wheel. Find the relation of the variables which will ensure the maximum of work being performed.

16. Find the place at which the contact of the two pitch circles of the spur-wheel, and segment attached to an overshot water-wheel, working with a uniform velocity, should be placed in order that the loss by friction at the journals of the wheel itself should be the least possible.

CHEMISTRY.—*Examiner, Dr. Andrews.*

PASS QUESTIONS.

1. Describe the differential (air) thermometer, and explain the uses to which it is applied.

2. What is the relation between the height of the barometer and the boiling point of a liquid?

3. Describe the spectra of sodium and thallium.

4. How has the composition of water been determined?

5. Describe the method of liquefying carbonic acid and the chief properties of the liquid.

6. How is chlorine gas prepared, and what are its properties?

7. In what proportion do gases combine by volume.

8. Give an account of the chief compounds of lime.

9. What are the chief ores of iron—state their composition.

10. What are the tests for lime?

HONOR QUESTIONS.

1. How is the tension of a vapour determined, (*a*) for temperatures below the boiling point; (*b*) for temperatures above the boiling point?

2. Give an account of the method of proving experimentally that gases and vapours absorb a portion of the rays of heat emanating from low sources. State also the general results for different gases and vapours.

3. How is it proved that the capacity for heat of a permanent gas under the same volume, is different from its capacity under the same pressure.

4. How are the bright lines of the sodium flame shown to be identical with the dark lines of the solar spectrum?

5. What is the composition by volume of the following bodies; hydrochloric acid, water, ammonia, phosphuretted hydrogen, chloride of ammonium.

6. Give an account of the method of analysing atmospheric air.

7. What are the chief properties of ozone, and how is it shown to be heavier than oxygen?

8. Describe the preparation, and state the composition of the hydrofluosilicic acid.

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General Class Examination.

9. How is silica separated from a siliceous mineral which is not attacked by hydrochloric acid.

10. What are the tests for lime and magnesia?

11. Give an account of the two oxides of copper—their composition, preparation, and uses.

12. What are the properties of the arsenious and arsenic acids?

13. Give an account of the unitary system, and illustrate the statement by examples.

14. What is the composition of aniline; state also its sources and uses?

15. What is the composition of chloroform, and how is it prepared?

16. Give an account of the theory of the Leyden jar and of the Condenser.

17. How is the presence of free electricity in the atmosphere demonstrated, and its character ascertained?

18. Explain fully the construction and theory of the induction machine.

CIVIL ENGINEERING.—*Examiner, Professor James Thomson.*

FIRST YEAR STUDENTS.

GEOMETRICAL DRAWING.

[NOTE.—The questions to which the word PASS is prefixed will be treated as of special importance towards passing, but will not be taken into account for Honors.]

1. (*Pass.*) Explain clearly what is meant in Descriptive Geometry by the following expressions:—*The projections of a point:—The projections of a line:—The projecting plane of a straight line:—The traces of a line:—The traces of a plane.*

2. (*Pass.*) Given the traces of two planes to find the projections of the common section of the planes, in the case in which the two planes do not meet the ground line in the same point, and the traces of the required line are accessible.

3. (*Pass.*) Given the traces of two planes to find the projections of the common section of the planes in the case in which the traces on the horizontal plane are parallel to one another, and those on the vertical plane intersect one another in an accessible point.

4. To find the projections of the intersection of two planes given by their traces in the case in which the traces on the vertical plane of projection intersect one another at an accessible point on that plane, while the traces on the horizontal plane of projection are not parallel, but would meet at a point so remote as to be inaccessible. You may find an easy solution by using an assumed vertical reference plane, parallel to the vertical plane of projection, and finding the traces of the given plane on that assumed plano.

5. (*Pass.*) In Descriptive Geometry, to draw through a given point a line parallel to a given straight line.

6. Supposing the traces of a plane and the projections of a point to be given, explain how to draw the projections of a line which passes through the given point, and is perpendicular to the plane; and how to find the length of the perpendicular intercepted between the point and the plane. Explanation without a diagram will suffice.

7. Explain the method taught in Hall's Descriptive Geometry for bisecting the angle between two straight lines given by their projections. The method intended is one in which the traces of both lines on one plane of projection are used.

8. How might the problem in the foregoing question be solved in cases in which it would be unmanageable to find the traces of both lines on either plane of projection; both or one of the traces being too far away?

9. To find the angle between two straight lines which intersect one another in the ground line;—their projections being given. You may observe that the method taught in Hall's Descriptive Geometry for finding the angle between two given lines will fail in this case. You may find a mode of solution by assuming a point in each of the given lines, conceiving these two points to be joined; and then constructing on the plane of delineation the triangle formed by the two given lines and the assumed line.

Appendix No. 8.

General Class Examination

10. What is meant in perspective by the "*centre of the picture*," which is also often called the "*centre of view*," on the supposition that to view the picture correctly the eye ought to be directed so as to look towards that point especially. Why is that supposition erroneous, and the name "centre of view" unsuitable? The same point is sometimes called the *point of view* or *point of sight*. Why are these two designations unsuitable?

11. Mention briefly the chief varieties of methods of drawing in perspective, taught in the course of the present Session, and explain clearly the method in which the horizontal and vertical projections of the visual rays are used, and the picture is oblique to the vertical plane of projection, and explain some other one of the methods also.

12. (*Pass.*) Show that in Descriptive Geometry two straight lines meeting the ground line not in the same point, cannot be the traces of a plane; or, in other words, that the two traces of a plane must meet the ground line in the same point.

13. On a vertical picture surface, given a perspective picture of a horizontal rectangle, and given the length and breadth of the rectangle, it is required to show how the proper point of view for the picture may be found.

14. On a vertical picture surface, given the perspective pictures of two horizontal rectangles, it is required to show how the proper point of view for the picture may be found.

15. Draw carefully and neatly an approximate ellipse made up of four quadrantal circular arcs of two lengths of radii. The minor axis is to be three-fourths of the length of the major axis.

16. Draw carefully and neatly an approximate ellipse made up of eight circular arcs of three lengths of radii, the minor axis being taken half the length of the major axis.

17. Show at least two methods of drawing a true ellipse, by finding numerous points of its circumference and joining them by a smooth curve.

18. Show how to find, for any point given by its projections, the shadow cast on any vertical surface, whether plane or curved, given by its horizontal trace, the light being supposed to fall in the direction usually adopted in engineering drawings.

19. Show how to solve the problem in the foregoing question in the more general case of having the light falling in any specified direction whatever.

20. Assume the projections of a horizontal thin circular plate or disk, in such a situation that its shadow, cast by light falling in the direction usually assumed, shall fall on the vertifical plane of projection, and draw the shadow margin on that plane.

21. Explain the nature of isometric drawing, and show how to make an isometric drawing of a house, supposing its dimensions to be sufficiently given. In this you should explain the distinction between the isometric and the natural scale.

SECOND YEAR STUDENTS.

CIVIL ENGINEERING.

1. Given the projections of a sphere and the projections of a straight line which penetrates the sphere; show how to find the points in which the line cuts the surface of the sphere.

2. What is the error in square links per acre in a survey made with a chain which is four inches too long?

3. Give a demonstration proving that in Gravatt's Level the adjustment of the line of collimation, so as to make the instrument give level sights when the bubble of the longitudinal spirit tube is at middle, may be effected either by shifting the line of collimation itself or by shifting the spirit tube; or, in other words, that there is no exact place in the image field to which it is necessary that the horizontal wire of the diaphragm be brought by the pair of screws for raising and lowering the diaphragm.

4. Explain fully how to compute the area of a field surveyed by offsets from the sides of a rectilinear figure; the figure, when of more than three sides, being divided into triangles by measured lines. In order that the principal field

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General Class Examination

measurements and that the computations may be duly checked, what are the usual extra measurements and calculations to be made in the case of surveying with the chain without measurement of angles?

5. If a triangle is to be determined by measurement, in the field, of a side and two adjacent angles, and if the sum of those two angles be about equal to 90°, so that the third angle must also be about equal to 90°; find approximately enough for ordinary practical purposes how much the calculated length of each of the required sides will be vitiated (if practically vitiated at all) by an error of two minutes in one of the two measured angles; the calculated side adjacent to that slightly inaccurate angle coming out by the calculation as being 3,146 links.

6. Explain the principle of the vernier, and give a practical rule for finding how to read the indications of any vernier.

7. What is the relation, as to quantity, between the Statute Acre and the Irish Acre; and how does this depend on the lengths of the Statute Perch and the Irish Perch?

8. How may two persons in a field between two distant stations, quickly range themselves into the straight line between the stations without going to either of them; and how may a person with a theodolite between two distant stations, proceed to find the exact line between them without going to either; the visions to the stations not being obstructed in either case?

9. For an oblique bridge show how to draw the horizontal projection of the coursing spiral of the intrado indefinite, as to length (that is without reference to its terminating at the oblique faces) if the development of that spiral be given.

10. In an oblique bridge explain what is meant by the "adjusted angle of skewback of the intrado," and show how the adjustment is made.

11. By use of tables furnished to you, calculate the area of a triangle having its sides 2,356 links, 2,938 links, and 1,567 links; and give the result in square links.

12. Reduce 6,273,000 square links to acres, roods, and perches, statute measure; and also to acres, roods, and perches, Irish.

13. Given two sides of a triangle, 1,960 and 2,594 links respectively, and the contained angle 73° 22'. Calculate, by tables furnished to you, the third side.

14. In Bidder's Table of Earthwork what quantities do the two numbers inserted for each pair of end heights respectively express, and how are they used for finding the content of a prismoidal block of given dimensions.

15. Explain the nature of the sextant, and demonstrate the relation which subsists between the angle contained by the two mirrors and the angle contained by the two rays.

16. "The operation of levelling may be defined as the art of finding how much higher or lower any one point is than another, or, more properly, the difference of their distances from the centre of the earth." Show how this is both an unpractical and an erroneous recognition; and give a correct statement of what the art of levelling is, or what a level surface is.

17. Explain how to set out the half-breadths for a railway on sidelong ground.

SECOND AND THIRD YEAR STUDENTS, AND COATES' PRIZE.

OFFICE AND FIELD WORK.

1. In a landscape picture submitted to you, you will observe rays of light or bright lines in the sky drawn radiating in various directions, some downwards and some upwards from a cloud behind which the sun is hidden. Bearing in mind that the sun is above the horizon, and that his rays are therefore inclined downwards in coming towards the earth; explain the principles according to which the bright lines of somewhat hazy atmosphere illuminated by light proceeding from openings or indentations of a cloud may properly be drawn in that manner.

Also at sunrise or sunset, when the rays of the sun are almost exactly horizontal, an observer on the top of a hill may sometimes see the appearance of illuminated lines, like those in the picture submitted, radiating from a point, at about the horizon, directly opposite to the sun, from the observer. Explain how this can be.

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2. Explain briefly how to proceed to draw correctly the shadows in a perspective picture of an object, a house for instance, whose dimensions are fully given, together with any other necessary data, such as the positions of the object, the picture surface, and the point of view, and the direction of the light.

3. A straight line (which may be understood to be one edge of a straight ruler or other object) is placed perpendicular to the vertical plane of projection, and casts its shadow on a right circular cone with vertical axis. It is required to show how to construct the horizontal projection of the shadow cast on the surface of the cone: the line of shadow not being limited in length by any limitation of the extension either of the straight line casting the shadow, or of the conical surface receiving it. The light is to be supposed to fall in the direction usually assumed in engineering drawings.

4. For computation of earthwork along an entire cutting or embankment, whether will the ordinary prismoidal method, or the method of "mean areas" give generally more correct results, and why? Also explain whether either of them has an advantage over the other in respect to giving means for taking sidelong slopes into account.

5. Explain how to range a railway curve from one straight tangent to another, with the curvature introduced gradually in passing from each straight tangent into the main or circular bend of the curve; taking the case in which the point of intersection of the straight tangents is inaccessible, and using the method of angles at the circumference for ranging the main bend.

6. In respect to the transit theodolite, in testing the instrument by the striding level, 1st, one leg of the level may be longer than the other; 2nd, one journal (or trunnion) of the axis on which it has to be applied may be higher than the other; or 3rd, both these may be the case. Show how to discriminate among all these three cases, and how to effect the requisite adjustments in each of these cases.

7. Given a map of an estate and a set of sections along centre lines of roads, together with additional sections if necessary, so that the whole may afford sufficient information as to the levels of the ground at its various parts, how could you proceed to lay down contours on the map, and what would be some of the advantages of having the given information put into the new form of a contour map?

8. In a triangle which may be denoted as ABC, with a split line AD, the following lengths have been noted as measurements made on the ground: AB=1876, AC=1358, BC=1964, AD=1282, BD=1082. Check the measured lengths of the three sides as to whether they be accurate or not.

9. In an oblique bridge, designed according to Buck's methods, show that the coursing joint in the extrado is more nearly perpendicular to the direction of the axis of the arch than the coursing joint of the intrado; and point out the corresponding relation which subsists between the directions of the heading joint in the extrado and in the intrado; and show therefore that if the development of the intradosal face of a stone be a rectangle, the development of the extradosal face of the same stone will not be a rectanngle.

[The following questions will be treated as of special inportance for Passing, but will not be taken into account for Honors.]

10. State a formula by which to compute the area of a triangle when its three sides are given.

11. Given a side and the opposite angle of a triangle, and either another side or another angle, state a process for resolving the triangle.

12. What is the line of collimation in a theodolite?

13. What is the essential condition to be brought about in the adjustment of the line of collimation in the common or Y theodolite?

14. What is the nature of a traverse survey?

15. What is the nature of a contour survey and map?

16. Describe the chief methods you know which are useful, or are commonly taught, for ranging a long offset?

THIRD YEAR STUDENTS, INCLUDING COATES' PRIZE.

CIVIL AND MECHANICAL ENGINEERING.

General Class Examination.

1. Name the five orders of Classical Architecture, and by written descriptions, aided by figured sketches, give distinctions among them, by which they might be severally recognised.

2. Name the successive styles of the Gothic Architecture of England, and give a brief description of each as to its character, and the period of its prevalence.

3. Explain the meanings of the following terms in Architecture:—Torus, Astragal, Cyma, or Cyma Recta, Ovolo, Scotia, Abacus, Modillion, Mullion, Entasis, Corbel, Crocket.

4. Show clearly why the neutral lamina of a beam supported at both ends and loaded at the middle, is subject to sheering stress, except at the middle of the length.

5. How does the stiffness of round shafts to resist elastic twisting vary with the diameter, and length? Give demonstration of your answer.

6. How does the strength of round shafts to resist set, or fracture, vary with their diameter? Give demonstration of your answer.

7. What is meant by the Modulus of Elasticity of a material?

8. For calculating the load required to produce any specified deflexion in a rectangular beam or bar, supported at both ends, and loaded at middle, the usual formulae make the required load to vary directly as the breadth, other things being equal: that is to say, that if the breadth alone be changed, the stiffness will be altered in proportion to the breadth. Show, however, that when the breadth of a bar of iron or other metal is increased, so as to be very great relatively to the depth, and so that the beam or bar assumes the character of a plate, the stiffness will be increased more than in the simple proportion in which the breadth is increased.

9. Taking the moment of inertia of an area or surface round an axis, in investigations on strength and stiffness of materials, to mean the sum obtained by multiplying each element of the area by the square of its distance from the axis, and adding the products together, find what is the moment of inertia of a rectangle round a line passing through its centre and parallel to two of its sides.

10. Also find what is the moment of inertia of a circular area round an axis passing through its centre normally to its surface, and its moment of inertia round a diameter.

11. Show that in a bar subjected to bending, the moment of the couple with which at any cross section it resists a given degree of bending within elastic limits is equal to the moment of inertia of that cross section round its neutral axis, multiplied by the longitudinal stress per unit of area at a unit of distance from the neutral axis: (the stress being understood to be the stress, or change of stress, induced by the bending, or to be the actual stress if the beam were free from stresses when not bent).

12. Answer one of the following two questions marked (*a*) and (*b*), *but not both, as credit will be allowed for only one.*

(*a*) Specify clearly what is meant by the "Modulus of Rupture," or "Co-efficient of Rupture" for a material, with reference to a certain assumed or supposed stress in the extreme fibre of a rectangular beam at the time of rupture by cross bending which leads to defining the Resistance to Breaking Across, or Modulus of Rupture, as eighteen times the load which is required to cross-break a bar of the material one inch square, supported at two points one foot apart, the load being applied in the middle between the points of support.

(*b*) State the principle modes of providing the water supply, subject to pressure, for Sir William Armstrong's Hydraulic Apparatus for working cranes, hoists, dock gates, &c., at harbours, and give a brief account of the nature of this apparatus.

13. Explain some of the methods used practically for measuring the head or depth of water over the crest of a rectangular notch, or over the vertex of a V notch, for the gauging of flowing water; pointing out the relative advantages of the several methods.

14. State the general principle as to the flow of water through orifices similar to one another in form and similarly situated relatively to the still-water surface,

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General Class Examination.

which was demonstrated in the lectures, on the hypothesis of the water being a perfect fluid.

15. Apply this principle in demonstrating, according to the same hypothesis, the truth of the Lowell Formula for the flow through rectangular notches, without regard to the exact amount of its numerical co-efficients.

16. Describe briefly the use of the triangular or lattice-work bracing often used for the sides of large beam bridges, contrasting the conditions as to rigidity and strength afforded through its means, with the flexibility and weakness which would occur if the top and bottom booms, or flanges, or "chords," were connected at their proper distance apart simply by upright bars giving quadrilateral instead of triangular openings.

17. Explain what is meant by the contraction of the vein in water issuing from an orifice.

18. In oblique bridges, what is meant by the focus of the joints in the face of the arch, and what by its eccentricity; and how is the focus used in the drawing of oblique bridges?

NATURAL PHILOSOPHY.—*Examiner, Professor Stevelly.*

EXPERIMENTAL PHYSICS.

1. Explain what two sciences take their origin from body or matter being extended, and yet limited in the extension of individual bodies. Explain the distinctions between the extension of pure space and that of body or matter.

2. Give one or two remarkable exemplifications of the limits to which experimentalists have been permitted to trace the extremely minute state of subdivision in which matter may be found to exist.

3. Define the terms "inertia," "force," and "motion." Explain the relation existing between these, and state how each of them is reduced to numerical valuation.

4. State the triangular law of equilibrium of three forces applied simultaneously to the same point of a body, and give the experimental proof of its truth.

5. Explain what is meant by the centre of gravity of a heavy body, and how it is experimentally proved that every body has a centre of gravity.

6. Explain the mechanical principle on which the action of the wings of a bird support its weight in the air and propel it, and can only propel it forward.

7. State the hydrostatic paradox, and describe some of the experimental proofs of its truth.

8. How much of its weight does a heavy body, entirely immersed in a heavy fluid, appear to lose? State the experimental proof of what you assert.

9. Define "the density of a body," and "the specific gravity" of a body. Point out the distinction between them, and prove that the specific gravity is equal to the true weight divided by the weight it appears to lose when immersed in the fluid, whose density is taken as unit.

10. State the hydrostatic laws which govern the flotation in equilibrio of a heavy body on a heavy fluid. Distinguish the three states of equilibrium in which it may be found to float.

11. Explain why you cannot fully charge a Leyden jar while its outer coating is insulated.

12. Define an "optical medium," and a "ray" of light, and state the laws which are found to govern the reflection and ordinary refraction of a ray of light.

NATURAL HISTORY—*Examiner, Professor Wyville Thomson.*

BOTANY.

1. Describe a vegetable cell, giving in detail the structure and the chemical composition of its different parts.

2. Name the four principal divisions of dicotyledonous plants, and give diagrams illustrating the essential characters of these divisions.

3. Describe the structure of a stamen. What adhesions occur between stamens? Name the natural orders in which certain special forms of adhesion between the stamens are characteristic.

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General Class Examination.

4. State all the points of distinction between a siliqua and a legume; between a siliqua and a capsule; between a drupe and a follicle; and between an achene, a caryopsis, a cypsela, and a mericarp.

5. Distinguish in detail between the natural orders Ranunculaceæ, Euphorbiaceæ, Amentiferæ, Cyperaceæ, and Coniferæ, in reference to the structure of the flower, and the insertions and relations of its various parts.

6. (*Honor*). State Hoffmeister's views with reference to the reproduction of the Equisetaceæ and the Lycopodiaceæ.

CHEMISTRY.—*Examiner, Dr. Andrews.*

1. What are the methods of separating lime from magnesia?

2. What are the tests for the oxides of Mercury?

3. How would you analyse, qualitatively, an alloy of copper, nickel, and zinc?

4. Give an account of the method of determining the quantity of sugar in urine by the reduction of the oxide of copper?

5. How is the amount of urea in urine determined?

6. What are the characteristic properties of calculi formed of the following bodies, (*a*) uric acid, (*b*) urate of ammonia, (*c*) cystic oxide?

7. Describe the uranium process for determining the amount of phosphoric acid in urine.

MATRICULATION EXAMINATION—OCTOBER, 1867.

Matriculation Examination.

THE ENGLISH LANGUAGE.—*Examiner, Professor Yonge.*

1. From what languages is the English language chiefly derived?

2. In what points do an English verb and noun differ from a Latin verb and noun?

3. Name one poet, one dramatic writer, one historian, one orator, of preeminent reputation, who flourished before the present century, with the title and subject of one of their most important works, and a statement of the reign or reigns in which they lived.

4. What is the difference in the qualities required from the historian and a writer of plays, and, generally, from a prose writer and a poet?

SUBJECT FOR ESSAY

(*Not to exceed three pages*).

THE USEFULNESS OR MISCHIEF OF AMBITION.

MATHEMATICS.—*Examiner, Professor Purser.*

ARITHMETIC.

1. Two men start at the same time to walk to a town $10\frac{1}{2}$ miles off. One reaches it 14 minutes before the other. How would it have been if the distance had been a mile longer?

2. An estate fifty years ago let for £2 13*s.* 1*d.*, Irish money, per Irish acre; it now fetches £3 0*s.* 6*d.*, English money, per English acre. Show that the land has just doubled in value. [13 pence Irish = 12 pence English.]

3. Calculate the interest on £2,715 6*s.* 8*d.* for $7\frac{1}{2}$ months, at $4\frac{3}{4}$ per cent.

4. Reduce to their simplest forms

$$\frac{\frac{1}{2}+\frac{1}{3}+\frac{1}{4}+\frac{1}{5}}{\frac{1}{3}+\frac{1}{4}+\frac{1}{5}+\frac{1}{6}}, \quad \frac{\frac{1}{5}-\frac{1}{7}}{\frac{1}{5}+\frac{1}{7}}+\frac{\frac{1}{7}-\frac{1}{9}}{\frac{1}{7}+\frac{1}{9}}.$$

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Matriculation Examination.

5. Express the following fractions as decimals to two places :—

$$\frac{11}{13}, \quad \sqrt{\frac{5}{7}}.$$

EUCLID.

1. Draw a straight line perpendicular to a given straight line of unlimited length from any point without it.

2. If from the extremities of the base of a triangle two straight lines be drawn to any point within the triangle, these lines are together less than the sum of the other two sides of the triangle, but contain a greater angle.

3. Describe a square equal to a given rectilineal figure.

ALGEBRA.

1. By what expression should $xy+yz+xz$ be multiplied that the product may be $(x+y)(y+z)(z+x)+xyz$.

2. Simplify the expression—

$$\frac{2a+3x}{2a-3x}+\frac{2a-3x}{2a+3x}$$

3. Solve the equations

(1) $\frac{x}{3}+\frac{x}{5}=2+\frac{x}{2}$

(2) $(x-3)(x-5)=(x+2)(x+7)$

(3) $\sqrt{x-7}+\sqrt{x}=7$

Peel Prizes in Geometry.—*Examiner, Professor Purser.*

1. Similar triangles are to one another in the duplicate ratio of their homologous sides.

2. The perpendiculars let fall from the vertices of a triangle upon the opposite sides meet in a point.

3. If a circle touch two given circles, the right line joining the points of contact passes through one of their centres of similitude.

4. Given base of a triangle and the radius of the circumscribing circle, find the locus of the centre of the inscribed circle.

5. If through the vertex of a triangle two lines be drawn making equal angles with the sides respectively, one to meet the base, the other to meet the circumference of the circumscribing circle, the rectangle under these lines is equal to the rectangle under the sides. Prove this, and hence solve the problem to draw through a given point a line cutting off from two intersecting lines a triangle of given area.

6. Perpendiculars are let fall on the sides of a given parallelogram from any point within it: prove that the quadrilateral formed by joining their feet has a constant area.

7. Describe a circle which shall bisect the circumferences of three given circles.

8. The circles circumscribing the three triangles formed by four intersecting lines pass through a common point.

9. A circle A is inscribed in an isosceles triangle, another circle B is described touching the sides of the extremities of the base; prove that the tangents to A at the points of intersection of the circles meet on B.

10. Two opposite vertices of a given square move upon two fixed right lines at right angles. Show that the remaining vertices will move upon another pair of fixed right lines.

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Scholarship Examinations.

SCHOLARSHIP EXAMINATIONS.—OCTOBER, 1867.

LITERARY SCHOLARSHIPS.—FIRST YEAR STUDENTS.

GREEK.—*Examiner, Professor MacDouall.*

I.—Translate the following unprepared passage:—

γραμματικῆς μὲν οὐδενὸς ἧττον ἐπεμεμέλητο καὶ δι' αὐτῆς ποιητικῆς πάσης· αὐτός τε τραγῳδίας ἐποίει καὶ κωμῳδίας εὐδοκίμους· ἔτι δὲ μᾶλλον ὕστερον αὐξηθείς, ὥστε καὶ τὴν δύναμιν συναυξῆσαι, ῥητορικῆς τε καὶ μουσικῆς καὶ τῆς περὶ τὰ μαθήματα θεωρίας καὶ φιλοσοφίας ἁπάσης ἐπεμελεῖτο. χάριν δὲ εἰδέναι πᾶσιν ἔλεγεν ἀεὶ τοῖς μαθήμασι, πολὺ μὲν ἔχουσι τὸ ἐλευθέριον, πολὺ δὲ τὸ χρήσιμον εἰς τὸν βίον, πάντων δὲ μάλιστα τὸ εὐδιάγωγον πρός τε νεότητα καὶ γῆρας· ἔλεγε δὲ καὶ τὰς Μούσας ἄρα διὰ τοῦτο πολλὰς ὑπὸ τῶν θεολόγων παραδεδόσθαι, ὅτι πολὺ τὸ ποικίλον ἔχει τὰ παιδεύματα καὶ πρὸς πᾶσαν βίου χρῆσιν οἰκεῖον. καὶ οὔτε τὴν ἐμπειρίαν αὐτῶν οὔτε τὴν ἀπόλειψιν ὁμοίαν ὑπελάμβανεν εἶναι τῇ τῶν βαναύσων τεχνῶν, ἀλλὰ τοὐναντίον ἐπονείδιστον τοῖς μετρίως ζῶσι τήν τε τούτων ἄγνοιαν καὶ τὴν τῶν βαναύσων ἐπιστήμην. οὕτω μὲν οὖν οὐκ ἔστιν ὅτῳ τῶν παιδευμάτων πρὸς ἀργυρισμὸν ἐχρήσατο οὐδὲ ἐκαπήλευσεν.

II.—Translate into Attic the following sentences:—

1. They sent word to us that, unless we compeared, to join them in the expedition, they would march against us. 2. He advised us to be on our guard against stimulante to eat when not hungry and to drink when not thirsty. 3. He constantly sent out bodies of cavalry, that the enemy's advanced guards might not fall upon the fields near the city and lay them waste. 4. The defendant seized and carried him off not in the house but in the street, when he might easily both have saved him and executed what had been decreed by the assembly. 5. When he perceived, that they not only were not setting free the states but were not even disbanding their army, he led his own force into Boeotia. 6. They do not wish to be concealed, and are even ashamed if not reputed to be wicked. 7. Who would have chosen to disobey, when he saw the king obeying? 8. You must so manage that every man may feel that he has been a principal cause of the victory. 9. Do you think that we shall still overtake them before they are in their fastnesses? for we look upon it as a great calamity that they ran away from us unobserved. 10. If death were an escape from everything it would be a god-send to the wicked to be delivered by dying from this body and their wickedness at the same time as from their vitality.

Translate the following lines from the *Medeia* of EURIPIDES:—

πολλάκις ἤδη διὰ λεπτοτέρων
μύθων ἔμολον καὶ πρὸς ἁμίλλας
ἦλθον μείζους ἢ χρὴ γενεὰν
θῆλυν ἐρευνᾶν· ἀλλὰ γὰρ ἔστιν
μοῦσα καὶ ἡμῖν, ἣ προσομιλεῖ
σοφίας ἕνεκεν, πάσαισι μὲν οὔ,
παῦρον δ' ἂν ἴσως
εὕροις γένος οὐκ ἀπόμουσον.
καί φημι βροτῶν οἵτινές εἰσιν
πάμπαν ἄπειροι μηδ' ἐφύτευσαν
παῖδας, προφέρειν εἰς εὐτυχίαν
τῶν γειναμένων. οἱ γὰρ ἄτεκνοι,
δι' ἀπειροσύνην εἴθ' ἡδὺ βροτοῖς
παῖδες τελέθουσ' εἴτ' ἀνιαρόν,
πολλῶν μόχθων ἀπέχονται.
οἷσι δὲ τέκνων ἔστιν ἐν οἴκοις
γλυκερὸν βλάστημ', ἐσορῶ μελέτῃ
κατατρυχομένους τὸν ἅπαντα χρόνον,
πρῶτον μὲν ὅπως θρέψουσι καλῶς
βίοτόν θ' ὁπόθεν λείψουσι τέκνοις·

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Scholarship Examinations.

ἔτι δ' ἐκ τούτων, εἴτ' ἐπὶ φλαύροις
  εἴτ' ἐπὶ χρηστοῖς
  μοχθοῦσι, τόδ' ἐστὶν ἄδηλον.
ἓν δὲ τὸ πάντων λοίσθιον ἤδη
πᾶσιν κατερῶ θνητοῖσι κακόν.
καὶ δὴ γὰρ ἅλις βίοτόν θ' εὗρον,
σώματά θ' ἥβην εἰσῆλθε τέκνων
χρηστοί τ' ἐγένοντ'· εἰ δὲ κυρῆσαι
δαίμων, εὐθὺς φροῦδος θάνατος
  προφερων καὶ ἅπαντας ἐς Ἅιδην.
πῶς οὖν λύει πρὸς ταῖς ἄλλαις
τήνδ' ἔτι λύπην ἀνιαροτάτην
  παίδων ἕνεκεν
  θνητοῖσι θεοὺς ἐπιβάλλειν.

Brief notes may be annexed touching points of language or metre or interpretation.

LATIN.—*Examiner, Professor William Nesbitt*, M.A.

Translate:—

1. Ager Tarquiniorum, qui inter urbem ac Tiberim fuit, consecratus Marti Martius deinde campus fuit. forte ibi tum seges farris dicitur fuisse, matura messi. quem campi fructum quia religiosum erat consumere, desectam cum stramento segetem magna vis hominum simil immissa corbibus fudere in Tiberim tenui fluentem aqua, ut mediis caloribus solet. ita in vadis haesitantis frumenti acervos sedisse illitos limo. insulam inde paulatim et aliis, quae fert temere flumen, eodem invectis factam. postea credo additas moles manuque adiutum, ut tam eminens area firmaque templis quoque ac porticibus sustinendis esset. direptis bonis regum damnati proditores sumptumque supplicium, conspectius eo, quod poenae capiendae ministerium patri de liberis consulatus imposuit, et qui spectator erat amovendus, eum ipsum fortuna exactorem supplicii dedit. stabant deligati ad palum nobilissimi iuvenes. sed a ceteris, velut ab ignotis capitibus, consulis liberi omnium in se averterant oculos, miserebatque non poenae magis homines quam sceleris, quo poenam meriti essent: illos eo potissimum anno patriam liberatam, patrem liberatorem, consulatum ortum ex domo Iunia, patres, plebem, quidquid deorum hominumque Romanorum esset, induxisse in animum ut superbo quondam regi tum infesto exsuli proderent. consules in sedem processere suam, missique lictores ad sumendum supplicium. nudatos virgis caedunt securique feriunt, cum inter omne tempus pater vultusque et os ejus spectaculo esset eminente animo patrio inter publicae poenae ministerium. secundum poenam nocentium, ut in utramque partem arcendis sceleribus exemplum nobile esset, praemium indici pecunia ex aerario libertas et civitas data. ille primum dicitur vindicta liberatus. quidam vindictae quoque nomen tractum ab illo putant: Vindicio ipsi nomen fuisse. post illum observatum, ut qui ita liberati essent, in civitatem accepti viderentur.

(*a*) Explain the constructions, *manu adjutum*; *porticibus sustinendis*; *Vindicio ipsi nomen esse*. (*b*) What were the other modes of manumission?

2. Quid? si illud etiam addimus, quod recte addi potest, nihil esse quod ad se rem ullam tam adliciat et tam attrahat quam ad amicitiam similitudo, concedetur profecto verum esse, ut bonus boni diligant asciscantque sibi quasi propinquitate coniunctos atque natura. Nihil est enim appetentius similium sui nec rapacius quam natura. Quam ob rem hoc quidem, Fanni et Scaevola, constat, ut opinor, bonis inter bonos quasi necessariam benevolentiam, qui est amicitiae fons a natura constitutus. Sed eadem bonitas etiam ad multitudinem pertinet. Non enim est inhumana virtus neque immunis neque superba, quae etiam populos universos tueri eisque optime consulere soleat, quod non faceret profecto, si a caritate vulgi abhorreret.

3. Lysandrum Lacedaemonium, cuius modo feci mentionem, dicere aiunt solitum Lacedaemonem esse honestissimum domicilum senectutis: nusquam enim tantum tribuitur aetati, nusquam est senectus honoratior. Quin etiam memoriae proditum est, cum Athenis ludis quidam in theatrum grandis natu venisset, magno consessu locum nusquam ei datum a suis civibus, cum autem ad Lace-

daemonios accessisset, qui, legati quum essent, certo in loco consederant, consurrexisse omnes illi dicuntur et senem sessum recepisse. Quibus quum a cuncto consessu plausus esset multiplex datus, dixisse ex iis quemdam 'Athenienses scire quae recta essent, sed facere nolle.'

GRAMMAR AND HISTORY.

1. From what part of the simple Latin verb are frequentative verbs formed, and how many terminations of these verbs are there? Give also the terminations of desideratives and inceptives. To what class of verbs do you assign those ending in *illo*—as *sorbillo*?

2. Explain the meaning and formation of the words *quin*, *quippe*, *adeo*, *actutum*, *dum*, *donec*, *palam*, *clam*, *procul*, *simul*.

3. Explain the constructions:

(*a*) *Macte virtute esto.*
(*b*) *Decemviri legibus scribundis.*
(*c*) *Maximam partem lacte vivunt.*
(*d*) *Cæsar dicere solebat non tam sua quam respublicæ interesse ut salvus esset.*

4. When was the office of censor instituted at Rome, and with what immediate object? State accurately the duties of the censors during the most flourishing period of the Republic? When did the office lose its importance?

5. What events in Roman history are connected with the names, Allia, Vesuvius, Caudium, Lentinum, Cysoncephalæ? Give dates in each case.

Translate:—

1. O felix una ante alias Priameïa virgo,
Hostilem ad tumulum Troiae sub moenibus altis
Iussa mori, quae sortitus non pertulit ullos,
Nec victoris heri tetigit captiva cubile!
Nos patria incensa, diversa per aequora vectae,
Stirpis Achilleae fastus iuvenemque superbum,
Servitio enixae, tulimus. Qui deinde, secutus
Ledaeam Hermionem Lacedæmoniosque hymenaeos,
Me famulo famulamque Heleno transmisit habendam.
Ast illum, ereptae magno inflammatus amore
Coniugis et scelerum Furiis agitatus, Orestes
Excipit incautum, patriasque obtruncat ad aras.
Morte Neoptolemi regnorum reddita cessit
Pars Heleno, qui Chaonios cognomine campos,
Chaoniamque omnem Troiano a Chaone dixit,
Pergamaque Iliacamque iugis hanc addidit arcem.
Sed tibi qui cursum venti, quae fata dedere,
Aut quisnam ignarum nostris deus appulit oris?
Quid puer Ascanius? Superatne? et vescitur aura,
Quae tibi iam Troia......?
Ecqua tamen puero est amissae cura parentis?
Ecquid in antiquam virtutem animosque viriles
Et pater Aeneas et avunculus excitat Hector?

(*a*) Who is the daughter of Priam referred to in the first verse?

(*b*) Distinguish between the meanings of the forms of expression, *quæ pertulit* and *quæ pertulerit.*

(*c*) Explain the use of *que* in *formulamque*, etc.

(*d*) State accurately the significance of the interrogative pronouns in the phrases—*Qui venti*; *quisnam deus*; *ecqua cura*; *ecquid in antiquam*, etc.

(*e*) Give the various meanings of *superat* used intransitively.

Appendix, No. 8.

Scholarship Examinations.

2. Ergo ubi me in montes et in arcem ex urbe removi,
Quid prius illustrem satiris Musaque pedestri?
Nec mala me ambitio perdit nec plumbeus Auster
Auctumusque gravis, Libitinae quaestus acerbae.
Matutine pater, seu Iane libentius audis,
Unde homines operum primos vitaeque labores
Instituunt - sic dis placitum -, tu carminis esto
Principium. Romae sponsorem me rapis. "Eia,
"Ne prior officio quisquam respondeat, urge!"
Sive Aquilo radit terras seu bruma nivalem
Interiore diem gyro trahit, ire necesse est.
Postmodo, quod mi obsit, clare certumque locuto
Luctandum in turba et facienda iniuria tardis.
"Quid vis, insane, et quas res agis?" improbus urget
Iratis precibus: "tu pulses omne quod obstat,
"Ad Maecenatem memori si mente recurras."
Hoc iuvat et melli est, non mentiar. At simul atras
Ventum est Esquilias, aliena negotia centum
Per caput et circa saliunt latus. "Ante secundam
"Roscius orabat sibi adesses ad Puteal cras."
"De re communi scribae magna atque nova te
"Orabant hodie meminesses, Quinte, reverti."—
"Imprimat his, cura, Maecenas signa, tabellis!"
Dixeris "Experiar:"—Si vis, potes," addit et instat.

(a) Illustrate from Horace the expression, *Musa pedestri.*
(b) What is the allusion in *Libitinæ quæstus ascerbæ?*
(c) Explain the constructions, *improbus urget; hoc melli est.*
(d) Write brief notes on *ad Puteal* and *de re communi.*

Translate into Latin prose:—

Then the son of the Dictator advances from his post to his father: "Without your orders, General," says he, "I would never fight out of my rank; no, not even were I to see victory certain. If you permit, I wish to show to yonder monster, since he so fiercely heaps taunts on the Roman youths, that I am sprung from that family which hurled the Gauls down from the Tarpeian rock." Then the Dictator says: "Prosper, my son, in virtue, and in piety towards thy father and country. Go on, and by the help of the gods render the Roman name invincible." Thereupon his companions arm the young man. He takes the shield of a foot-soldier, he is girt with a Spanish sword, handy for close fighting. They lead him forward, armed and equipped, against the Gaul who was stupidly exulting, and (since this too has seemed to them of old time worthy of remembrance) even putting out his tongue in derision.

History and the English Language.—*Examiner Professor Yonge.*

HISTORY.

1. Between the conquest and the death of Henry VII. what kings were succeeded by their sons, and in what instances did the succession pass to one who was not a son?

2. What were the chief causes which induced Simon de Montfort to rise against Henry III.; and what great constitutional benefit does England derive from his rebellion?

3. What kings after Edward I. waged war with Scotland? What were the chief events in any such wars?

4. Who were the combatants in the battles of Lewes, Neville's Cross, Otterbourne, Shrewsbury, Wakefield, Barnet, Sluys, Falkirk, Dover, and Verneuil?

5. Who was the Earl of Warwick in the reign of Henry VI., and who in the reign of Henry VII.?

6. In French History what were the States General? What the Parliament?
7. Who were Blanche of Castile, Joinville, Etienne Marcel, Du Gueselin?
8. In what instances did either French or English kings take a personal share in the Crusades?
9. In what particulars did the Crusades produce important changes in the manners or feelings of the time, and exercise a permanent influence on the subsequent history of Christendom?
10. What great acquisitions were made by the French crown from 1450–1509?

SUBJECT FOR ESSAY

(*Not to exceed three pages*).

THE ADVANTAGES OF THE STUDY OF HISTORY.

SECOND YEAR STUDENTS.

GREEK.—*Examiner, Professor Mac Douall.*

I.—Translate the following passage from the *Symposion* of PLATON:—

Ἔφη οἱ[1] Σωκράτη ἐντυχεῖν λελουμένον τε καὶ τὰς βλαύτας ὑποδεδεμένον,—ἃ[2] ἐκεῖνος ὀλιγάκις ἐποίει,—καὶ ἐρέσθαι αὐτόν, ὅποι[3] ἴοι[3] οὕτω καλὸς γεγενημένος. καὶ τὸν[4] εἰπεῖν, ὅτι[5] "ἐπὶ δεῖπνον εἰς[6] Ἀγάθωνος.[6] χθὲς γὰρ αὐτὸν διέφυγον τοῖς ἐπινικείοις[a] φοβηθεὶς τὸν ὄχλον, ὡμολόγησα δ' εἰς τήμερον[b] παρέσεσθαι. ταῦτα[7] δὴ ἐκαλλωπισάμην,[c] ἵνα[8] καλὸς παρὰ καλὸν ἴω."[8] "ἀλλὰ σύ," ἦ[9] δ'[9] ὅς,[9] "πῶς ἔχεις πρὸς τὸ ἄμα ἰέναι ἄκλητος[10] ἐπὶ δεῖπνον;" καὶ ἔφη εἰπεῖν, ὅτι[5] "οὕτως, ὅπως[11] ἂν[11] σὺ κελεύῃς."[11] "ἕπου τοίνυν," ἔφη, "ἵνα καὶ τὴν παροιμίαν[d] διαφθείρωμεν μεταβάλλοντες, ὡς ἄρα καὶ ἀγαθῶν ἐπὶ δαῖτας ἴασιν αὐτόματοι[e] ἀγαθοί.* Ὅμηρος μὲν γὰρ κινδυνεύει οὐ μόνον διαφθεῖραι ἀλλὰ καὶ ὑβρίσαι εἰς ταύτην τὴν παροιμίαν. ποιήσας γὰρ τὸν Ἀγαμέμνονα διαφερόντως ἀγαθὸν ἄνδρα τὰ πολεμικὰ τὸν δὲ Μενέλεων μαλθακὸν αἰχμητήν, θυσίαν ποιουμένου καὶ ἑστιῶντος[f] τοῦ Ἀγαμέμνονος, ἄκλητον[g] ἐποίησεν ἐλθόντα τὸν Μενέλεων† ἐπὶ τὴν θοίνην,[h] χείρω[i] ὄντα ἐπὶ τὴν τοῦ ἀμείνονος." ταῦτ' ἀκούσας[12] εἰπεῖν[12] ἔφη· "ἴσως μέντοι κινδυνεύσω κἀγὼ—οὐχ ὡς σὺ λέγεις, ὦ Σώκρατες, ἀλλὰ καθ' Ὅμηρον—φαῦλος[k] ὢν ἐπὶ σοφοῦ ἀνδρὸς ἰέναι θοίνην ἄκλητος. ὅρα[13] οὖν ἄγων με τί[13] ἀπολογήσει·[13] ὡς ἐγὼ μὲν οὐχ ὁμολογήσω ἄκλητος[14] ἥκειν,[14] ἀλλ' ὑπὸ σοῦ κεκλημένος." "σύν τε δύ'," ἔφη, "ἐρχομένω πρὸ ὃ τοῦ βουλευσόμεθ'‡ ὅ τι ἐροῦμεν. ἀλλ' ἴωμεν." τοιαῦτ' ἄττα σφᾶς[16] ἔφη διαλεχθέντας ἰέναι.[16] τὸν οὖν Σωκράτη ἑαυτῷ πως προσέχοντα τὸν νοῦν κατὰ τὴν ὁδὸν πορεύεσθαι ὑπολειπόμενον καὶ—περιμένοντος οὗ[17]—κελεύειν προϊέναι εἰς τὸ πρόσθεν. ἐπειδὴ δ' ἧ[18] γενέσθαι[18] ἐπὶ τῇ οἰκίᾳ τῇ Ἀγάθωνος, ἀνεῳγμένην[l] καταλαμβάνειν τὴν θύραν, καὶ εὐθὺς παῖδά τιν' ἔνδοθεν ἀπαντήσαντ' ἄγειν οὗ κατέκειντο οἱ ἄλλοι.

II.—*a–l.* Derive or decompound every word to which one of these letters is attached.

1–18. Explain distinctly the construction of every word or phrase to which one of these figures is attached.

* Translate the byword here said to be perverted, viz., *αὐτόματοι δ' ἀγαθοὶ δειλῶν ἐπὶ δαῖτας ἴασιν.*

† Can you refer to the passage in Book II. of the *Ilias* which is here alluded to?

‡ How do you construe and explain the saw, in the Xth Book of the *Ilias*, which is here alluded to?

σύν τε δύ' ἐρχομένω καί τι πρὸ ὃ τοῦ ἐνόησεν
ὅππως κέρδος ἔῃ· μοῦνος δ' εἴπερ τι νοήσῃ,
τῷ βράσσων μὲν ἔνεστι νόος λεπτὴ δέ τε μῆτις.

Appendix, No. 8.

Scholarship Examinations.

I.—Translate the following strophes from the *Troades* of Euripides:—

ΚΑΣΑΝΔΡΑ.

ἄνεχε πάρεχε φῶς ! φέρε σέλας ![4]
ἰοὺ ἰού ! στρ.
λαμπάσι τόδ' ἱερὸν
ὑπὲρ Ὑμεναιον φλέγω.
μακάριος ὁ γαμέτας,
μακαρία δ' ἐγὼ βασιλικοῖς λέκτροις
κατ' Ἄργος ἁ γαμουμένα.
Ὑμήν, ὦ Ὑμέναι' ἄναξ !
ἐπεὶ σὺ, μᾶτερ ! ἐπὶ δάκρυσι καὶ
γόοις πόσιν θανόντα πατρίδα τε
φίλαν καταστένουσ' ἔχεις,
ἐγὼ τόδ', Ὑμέναιε ! σοὶ
ἀναφλέγω πυρὸς φῶς ἐς αὐγάν,
ἐς αἴγλαν ἐπ' ἐμοῖς γάμοις.
δίδου δ', ὦ Ἑκάβας σέβας !
παρθένων ἐπὶ λέκτροις ἃ νόμος ἔχει.
πάλλε πόδ', ἱερὸν ἄναγε χορόν !—
εὐὰν εὐοῖ !— ἀντ.
ὡς ἐπὶ πατρὸς ἐμοῦ
μακαριωτάταις τύχαις.
ὁ χορὸς ὅσιος ἐμοί·
ἄγε σύ, Φοῖβε ! νιν κατὰ σὸν ἐν δάφναις
ἀνάκτορον θυηπόλῳ.
Ὑμήν, ὦ Ὑμέναι' Ὑμήν !
χόρευε, μᾶτερ ! ἄναγε, πόδα σὸν
ἕλισσε τᾷδ' ἐκεῖσε, μετ' ἐμέθεν
φέρουσα φιλτάταν βάσιν
βόα τε τὸν Ὑμέναιον ἐν
μακαρίαις ἀοιδῶν ἰακχαῖς.
ἴτ' ὦ καλλίπεπλοι Φρυγῶν
κόραι ! μέλπετέ μοι γάμον
καὶ πεπρωμένον εὐνᾷ πόσιν ἐμέθεν.

II.—Subjoin brief notes, explanatory, illustrative, and critical; translating also and commenting upon such lections, differing from those given above, as you may remember.

LATIN.—*Examiner, Professor William Nesbitt*, M.A.

Translate:—

1. Ceterum prae strepitu ac tumultu nec consilium nec imperium accipi poterat, tantumque aberat ut sua signa atque ordines miles et locum nosceret, ut vix ad arma capienda aptandaque pugnae competeret animus, opprimerenturque quidam onerati magis his quam tecti. et erat in tanta calligine maior usus aurium quam oculorum. ad gemitus vulnerum ictusque corporum aut armorum et mixtos strepentium paventiumque clamores circumferebant ora oculosque. alii fugientes pugnantium globo illati haerebant, alios redeuntes in pugnam avertebat fugientium agmen, deinde, ubi in omnis partis nequiquam impetus capti, et ab lateribus montes ac lacus, a fronte et ab tergo hostium acies claudebat, apparuitque nullam nisi in dextera ferroque salutis spem esse, tum sibi quisque dux adhortatorque factus ad rem gerendam, et nova de integro exorta pugna est, non illa ordinata per principes hastatosque ac triarios, nec ut pro signis antesignani, post signa alia pugnaret acies, nec ut in sua legione miles aut cohorte aut manipulo esset: fors conglobat et animus suus cuique ante aut post pugnandi ordinem dabat; tantusque fuit ardor animorum, adeo in tentus pugnae animus, ut eum motum terrae, qui multarum urbium Italiae magnas partes prostravit avertitque cursu rapidos amnis, mare fluminibus invexit, montes lapsu ingenti proruit, nemo pugnantium senserit.

(*a*) Distinguish *signa*, *ordinem*, and *locum*.

(*b*) Describe briefly the changes in the organization of the legion which took place at different epochs under the Republic, and point out anything peculiar which you observe in the use of the technical terms in this passage.

2. Ego vero propter sermonis delectationem tempestivis quoque conviviis delector nec cum aequalibus solum, qui pauci admodum restant, sed cum vestra etiam aetate atque vobiscum, habeoque senectuti magnam gratiam, quae mihi sermonis aviditatem auxit, potionis et cibi sustulit. Quod si quem etiam ista delectant, ne omnino bellum indixisse videar voluptati, cuius est fortasse quidam naturalis modus, non intelligo ne in istis quidem ipsis voluptatibus carere sensu senectutem. Me vero et magisteria delectant a maioribus instituta et is sermo, qui more maiorum a summo adhibetur in poculis, et pocula, sicut in symposio Xenophontis est, minuta atque rorantia et refrigeratio aestate et vicissem aut sol aut ignis hibernus. Quae quidem etiam in Sabinis persequi soleo conviviumque vicinorum cotidie compleo, quod ad multam noctem quam maxime possumus vario sermone producimus. At non est voluptatum tanta quasi titillatio in senibus. Credo, sed ne desideratio quidem. Nihil autem est molestum quod non desideres.

(*a*) What do you understand by *magisteria*? Point out the force of the subjunctive *desideres* in the last sentence.

HISTORY.

1. To what part of the Peninsula was the name Italia originally confined, and how was it subsequently extended at successive periods? What districts were meant by the terms *Latium vetus* or *antiquum*, and *Latium novum* or *adjectum*.

2. In what year, and for what purpose, were the two cities Placentia and Cremona settled?

3. Write a brief description of the battle of the Trasimene Lake, or Cannæ, or Zama.

Translate into Latin prose:—

Even at this early age the Greeks had made considerable advances in civilization. They were collected in fortified towns, which were surrounded by walls and adorned with palaces and temples. The massive ruins of Mycenæ, and the sculptured lions on the gate of this city belong to the heroic age, and still excite the wonder of the beholder. Commerce, however, was little cultivated, and was not much esteemed: it was deemed more honourable for a man to enrich himself by robbery and piracy than by the arts of peace. Coined money is not mentioned in the poems of Homer. Whether the Greeks were acquainted, at this early period, with the art of writing, is a question which has given rise to much dispute and must remain undetermined; but poetry was cultivated with success, though yet confined to epic strains, or the narration of the exploits and adventures of the heroic chiefs.

Translate:

1. Ferme in diebus paucis, quibus haec acta sunt,
Chrysis uicina haec moritur. So. O factum bene:
Beasti: ei metui a Chryside. Si. Ibi tum filius
Cum illis, qui amarant Chrysidem, una aderat frequens.
Curabat una funus: tristis interim,
Non numquam conlacrumabat. placuit tum id mihi.
Sic cogitabam "hic paruae consuetudinis
Causa huius mortem tam fert familiariter:
Quid si ipse amasset? quid hic mihi faciet patri?"
Haec ego putabam esse omnia humani ingeni
Mansuetique animi officia. quid multis moror?
Egomet quoque eius causa in funus prodeo,
Nil etiam suspicans mali. So. Hem quid est? Si. Scies.
Ecfertur. imus. interea inter mulieres,
Quae ibi aderant, forte unam aspicio adulescentulam,

Appendix, No. 8.

Scholarship Examinations.

Forma. So. Bona fortasse. Si. et uoltu, Sosia,
Adeo modesto, adeo uenusto, ut nil supra.
Quae quom mihi lamentari praeter ceteras
Visast, et quia erat forma praeter ceteras
Honesta ac liberali, accedo ad pedissequas.
Quae sit rogo. sororem esse aiunt Chrysidis.
Percussit ilico animum. attat hoc illud est,
Hinc illae lacrumae, haec illast misericordia.

What inference may be drawn from the Latin comic metres as to the ordinary pronunciation of the Latin spoken language? Quote instances from Terence to prove your answer. Give the date of Terence, and a sketch of any of his plots you may remember.

2. At quondam, dum longa gerunt pugnacibus armis
Bella, Parentales deseruere dies.
Non impune fuit: nam dicitur omine ab isto
Roma surbubanis incaluisse rogis.
Vix equidem credo: bustis exisse feruntur,
Et tacitæ questi tempore noctis avi.
Perque vias Urbis, Latiosque ululasse per agros
Deformes animas, vulgus inane, ferunt.
Post ea præteriti tumulis redduntur honores:
Prodigiisque venit funeribusque modus.
Dum tamen hæc fiunt, viduæ cessate puellæ:
Expectet puros pinea tæda dies.
Nec tibi, quæ cupidæ matura videbere matri,
Comat virgineas hasta recurva comas.
Conde tuas, Hymenæe, faces, et ab ignibus atris
Aufer: habent alias mœsta sepulcra faces.
Di quoque templorum foribus celentur opertis:
Thure vacent aræ, stentque sine igne foci.
Nunc animæ tenues, et corpora functa sepulcris
Errant: nunc posito pascitur umbra cibo.
Nec tamen hæc ultra, quam tot de mense supersint
Luciferi, quot habent carmina nostra dies.
Hanc, quia justa ferunt, dixere Feralia lucem.
Ultima placandis Manibus illa dies.

(*a*) What various readings have been proposed for the senseless *dies* in the third line from the end.

(*b*) Explain the phrase *parentales dies*.

(*c*) Show, by citations, that the quantity of the *e* in *Feralia* is unusual.

3. Tum porro puer, ut saevis proiectus ab undis
Navita, nudus humi iacet, infans, indigus omni
Vitali auxilio, cum primum in luminis oras
Nixibus ex alvo matris natura profudit,
Vagituque locum lugubri complet, ut aequumst
Cui tantum in vita restet transire malorum.
At variae crescunt pecudes armenta feraeque,
Nec crepitacillis opus est, nec cuiquam adhibendast
Almae nutricis blanda atque infracta loquella,
Nec varias quaerunt vestes pro tempore caeli,
Denique non armis opus est, non moenibus altis,
Qui sua tutentur, quando omnibus omnia large
Tellus ipsa parit naturaque daedala rerum.

Translate into appropriate Latin verse:—

Gather ye rose-buds while ye may,
Old Time is still a-flying;
And this same flower that smiles to-day,
To-morrow will be dying.

Appendix, No. 8.

Scholarship Examinations.

The glorious Lamp of Heaven, the Sun,
The higher he's a-getting
The sooner will his race be run,
And nearer he's to setting.

That age is best which is the first
When youth and blood are warmer;
But being spent, the worse, and worst
Times, still succeed the former.

HISTORY AND ENGLISH LITERATURE.—*Examiner, Professor Yonge.*

1. What do you consider the golden age of English literature? Mention the writers on whose reputation you found your opinion, with a description of one of their principal works.
2. What are the chief difficulties in the English language as it presents itself to a foreigner seeking to learn it?
3. What idea can the translation of a poem from one language into another give of the original? Does your answer apply equally to all kinds of poetry, or to which kind most? Name some of the chief translations of poems in foreign languages, ancient or modern, into English.
4. Give a sketch of either one of Shakespeare's Plays, or Paradise Lost, or Absalom and Achitophel, or the Rape of the Lock, or of one of Scott's principal poems, or of Childe Harold.
5. What are the principal sources from which the English language is principally derived: and in what respect does it most differ from the classical languages?
6. What great English poets have also been eminent as writers of prose?

MODERN LANGUAGES.—*Examiner, Professor Meissner.*

FRENCH.

I.—Translate into French:

It is difficult to conceive a duller place than Saint Germans was when James II. held his Court there; and yet there was scarcely in all Europe a residence more enviably situated than that which the generous Lewis had assigned to his suppliants. The woods were magnificent, the air clear and salubrious, the prospects extensive and cheerful. No charm of rural life was wanting; and the towers of the greatest city of the Continent were visible in the distance. The royal apartments were richly adorned with tapestry and marquetry, vases of silver and mirrors in gilded frames. A pension of more than forty thousand pounds sterling was annually paid to James from the French Treasury. He had a guard of honour composed of some of the finest soldiers in Europe. But over the domain and mansion brooded a constant gloom.—MACAULAY.

II.—Translate into English:—

BERALDE.

Rien. Il ne faut que demeurer en repos. La nature d'elle-même, quand nous la laissons faire, se tire doucement du désordre où elle est tombée. C'est notre inquiétude c'est notre impatience qui gâte tout; et presque tous les hommes meurent de leurs remèdes, et non pas de leurs maladies.

ARGAN.

Mais il faut demeurer d'accord, mon frère, qu'on peut aider cette nature par de certaines choses.

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Scholarship Examinations.

BERALDE.

Mon Dieu ! mon frère, ce sont pures idées dont nous aimons à nous repaitre; et, de tout temps, il s'est glissé parmi les hommes de belles imaginations que nous venons à croire parce qu'elles nous flattent, et qu'il serait à souhaiter qu'elles fussent véritables. Lorsqu'un médecin vous parle d'aider, de secourir, de soulager la nature, de lui ôter ce qui lui nuit et lui donner ce qui lui manque, de la rétablir, et de la remettre dans une pleine facilité de ses fonctions; lorsqu'il vous parle de rectifier le sang, de tempérer les entrailles et le cerveau, de dégonfler la rate, de raccommoder la poitrine, de réparer le foie, de fortifier le cœur, de rétablir et conserver la chaleur naturelle, et d'avoir des secrets pour étendre la vie à de longues années, il vous dit justement le roman de la médecine. Mais, quand vous en venez à la vérité et à l'experience, vous ne trouvez rien de tout cela ; et il en est comme de ces beaux songes, qui ne vous laissent au réveil que le déplaisir de les avoir crus.—Moliere.

III.—Heureux qui de l'oubli ne fuit point les ténèbres !
Heureux qui ne sait pas combien d'échos funèbres
Le bruit d'un nom fait retentir !
Et si la gloire est inquiète,
Et si la palme du poëte
Est une palme de martyr !

Sans craindre le chasseur, l'orage ou le vertige,
Heureux l'oiseau qui plane et l'oiseau qui voltige !
Heureux qui ne veut rien tenter !
Heureux qui suit ce qu'il doit suivre !
Heureux qui ne vit que pour vivre,
Qui ne chante que pour chanter !

V. Hugo.

IV.—Give a short account, in French, of Fénélon.

GERMAN.

Translate into German :—

I.—It was a glorious hot summer day, hotter than we often have in England; and the chimes of Cambridge (U.S.) rang out merrily, and the little town was full of ladies with the brightest of bonnets and the prettiest of faces. It was the last day of the Academic course, on which the fourth-year students gave a sort of farewell festival to the rest of the College and to their friends. By the kindness of one of my friends—Professor Lowell—I was invited to be present at the ceremony. On the twentieth of June we strolled across the College grounds to the house of the President, where the Professors and Students were assembled. It so happened that on that morning the news had reached America of the death of Mr. Clough; and it was pleasant to me, as it would have been to any Englishman, to see how kindly and how highly his memory was cherished by his brother professors who had known and loved him.—Edward Dicey.

Translate into English :—

II.—Ich aber merkte nun, daß es Prager Studenten waren, und bekam einen ordentlichen Reſpekt vor ihnen, beſonders da ihnen das Latein nur ſo wie Waſſer vom Munde floß. „Iſt der Herr auch ein Studirter?" fragte mich darauf der Waldhorniſt. Ich erwiederte beſcheiden, daß ich immer beſondere Luſt zum Studiren, aber kein Geld gehabt hätte. „Das thut gar nichts," rief der Waldhorniſt, „wir haben auch weder Geld, noch reiche Freundſchaft. Aber ein geſcheuter Kopf muß ſich zu helfen wiſſen. Aurora musis amica das heißt zu deutſch: mit vielem Frühſtücken ſollſt du dir nicht die Zeit verderben. Aber wenn dann die Mittagsglocken von Thurm zu Thurm und von Berg zu Berg über die Stadt gehen, und nun die Schüler auf einmal mit großem Geſchrei aus dem alten finſtern Kollegium heraus brechen und im Sonnenſcheine durch die Gaſſen ſchwärmen—da begeben wir uns bei den Kapuzinern zum Pater Küchenmeiſter und finden unſern gedeckten Tiſch, und iſt er auch nicht gedeckt, ſo ſteht doch für jeden ein voller Topf darauf, da fragen wir nicht viel darnach und eſſen und perfectioniren uns dabei noch im Lateiniſchſprechen.—Eichendorff.

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III.—Die Rache.

Der Knecht hat erſtochen den edeln Herrn,
Der Knecht wär' ſelber ein Ritter gern.

Er hat ihn erſtochen im dunkeln Hain
Und den Leib verſenket im tiefen Rhein;

Hat angeleget die Rüſtung blank,
Auf des Herren Roß ſich geſchwungen frank.

Und als er ſprengen will über die Brück',
Da ſtutzet das Roß und bäumt ſich zurück,

Und als er die güldnen Sporen ihm gab,
Da ſchleuderts ihn wild in den Strom hinab.

Mit Arm, mit Fuß er rudert und ringt
Der ſchwere Panzer ihn niederzwingt.

Uhland.

ENGINEERING SCHOLARSHIPS.—*Examiner, Professor James Thomson.*

GEOMETRICAL DRAWING.

[NOTE.—The numbers annexed to the several questions are values assigned to them, indicating their relative importance for the examination.]

1. To find the traces of the plane which passes through a given line and a given point, according to the method taught in Hall's Descriptive Geometry. (3.)

2. To find the traces of the plane which passes through a given line and a given point, in any case in which neither the traces of the given line, nor the traces of a line parallel to it passing through the given point, are accessible:—for instance, when the given line is nearly parallel to the "ground line," and when its traces, as also those of a line parallel to it through the given point, would be far beyond the limits of the available plane of delineation. (8.)

3. In Descriptive Geometry:—"Through a given point to draw a plane parallel to a given plane." (5.)

4. Work out one or other of the two following problems marked (*a*) and (*b*); but not both, as credit will be given for only one:—

(*a*) Draw carefully and neatly an approximate ellipse made up of four quadrantal circular arcs of two lengths of radii. The minor axis is to be three-fourths of the length of the major axis. (7.)

(*b*) Draw carefully and neatly an approximate ellipse made up of eight circular arcs of three lengths of radii, the minor axis being taken half the length of the major axis. (7.)

5. Specify distinctly what is the direction in which the rays of light are ordinarily assumed as falling for the delineation of shadows in engineering drawings. (7.)

6. Explain how, in Descriptive Geometry, to draw the projections of the straight line, indefinite as to length, which passes through a point whose projections are given, and is perpendicular to a plane whose traces are given. (2.)

7. Explain clearly any good method by which a perspective picture may be drawn when the original objects are given by horizontal and vertical projections of their points and lines (that is, in other words, by plans and elevations), the picture surface being a vertical plane, oblique to the vertical plane of projection. (9.)

8. If a true perspective picture of a house be given which shows the front and gable end—the picture plane being vertical; the house being of ordinary simple

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form, having the front and gable end made as vertical planes at right angels to each other; and having level straight lines shown on the front and also on the gable end; and the length and breadth of the house measured horizontally along the front and gable end being both given in feet; it is required to explain how the pole or centre of the picture, and the point of view or eye point may be found, and how the vertical heights shown in perspective in the picture, such as those of the front and gable, may be determined in feet.

You are advised to aid your explanations by diagrams or rough sketches illustrative of some of the steps; but not to attempt to work out accurately an example of the whole process, as that would probably prove tedious or impracticable with the paper and instruments which may be available to you. (11.)

9. Explain the nature of isometric drawing, and show how to make an isometric drawing of a house, supposing its dimensions to be sufficiently given. In this you should explain the distinction between the isometric and the natural scale. (3.)

10. Supposing a rectangular parallelepiped to be placed in proper position for being isometrically projected on a plane of delineation; determine accurately by geometrical construction the angle which any edge of it makes with the plane of delineation, and the angle which any of its faces makes with that plane. Also show how to draw the isometrical projection of any curve which may be given on one of the faces of the body. (5.)

SURVEYING, LEVELLING, MENSURATION, &c.

1. Compute the area of the entire plot of land shown surveyed in the accompanying leaf of a field book, and give your results in acres, roods, and perches. Tables for use in this computation will be supplied to you. (10.)

2. Explain the measurements and calculations which you would commonly use for taking out areas of fields or other tracts of land from maps. (4.)

3. Make out an example of a level field book containing assumed observations on the staff for at least ten points on the ground, or other fixed points (bench marks, for instance) whose levels are to be referred to a datum; and including the case in which several of the observations are made without moving the instrument to a new station: work out the reduced levels, and show how the calculations ought to be checked. (6.)

4. What is parallax in a theodolite or levelling instrument: when and how ought the adjustment for prevention of parallax to be made: and what is the precise condition of all things concerned, which is to be brought about by the carrying into effect of that adjustment. (6.)

5. What is the line of collimation in a theodolite? How ought it to be placed in the telescope of a Y theodolite? (5.)

6. With the theodolite offered to you, measure accurately the horizontal angles subtended at its station by the intervals between the several objects which will be pointed out to you; and check the correctness of your measurements by remeasuring the angles by a different part of the horizontal graduated circle. (12.)

7. What have you to state as to whether either Sir John Macneill's book of Earthwork Tables or Bidder's Table is to be preferred to the other in respect to the quantity of earth which each would give for the same cutting? Give reasons for what you state. (4).

8. Calculate the weight per yard of a rail of the cross section given in the drawing submitted to you, endeavouring to bring out the result without greater error than about two per cent. of the true weight; and counting wrought iron as weighing ·278 lbs. to the cubic inch. (5.)

9. Explain how, in surveying with the chain and without a theodolite or other angular instrument, a straight line may be ranged between two given points, vision and chaining along the line being both obstructed, but the ground being supposed to be open past the obstruction at one side. (5.)

10. Supposing a line to have been ranged as proposed in the foregoing question, show methods for checking the ranging and measurement of the line in two cases;—1st, with the use of the chain but no angular instrument; and 2nd, with the use of the chain and some kind of angular instrument. (4.)

CHEMISTRY.—*Examiner, Dr. Andrews.*

1. What are the laws according to which gases expand when heated? Are these laws strictly true?
2. Give an account of the specific heat of bodies, and state the relation which exists between the atomic weights and specific heats of the elementary bodies?
3. Explain clearly the cause of the fall of temperature during spontaneous evaporation.
4. Give an account of the relations between certain dark lines in the solar spectrum and the bright lines of the spectra of some of the metals.
5. How is carbonic oxide prepared, and what are its chief properties?
6. State the combinations and properties of cyanogen, and mention its more important compounds.
7. Contrast the properties of carbon and silicon, and of their compounds; showing in what respects they agree, and in what respects they differ from one another.
8. State the theory of volumes, and illustrate it by reference to the gaseous compounds of nitrogen and of carbon.
9. What are the tests for lime and magnesia, and the precautions to be attended to in separating those bases from one another?
10. What are the sources of alumina, and its chief properties?
11. Give an account of the more important alloys of copper?
12. How would you analyse an alloy of tin, silver, and copper?
13. What are the chief ores of zinc, and how is that metal obtained from them?
14. Describe Daniell's battery, and explain the cause of the constancy of its action.
15. What are the leading laws of diamagnetism?
16. Give an account of the construction of the thunder rod.

PRACTICAL CHEMISTRY.

1. How would you analyse a compound of baryta, lime, and magnesia, the bases being in the form of carbonates?
2. Describe the action of caustic potash on solutions of copper in presence of cane sugar and of diabetic sugar.
3. What is the action of a solution of cane sugar upon polarized light?
4. How would you distinguish an arsenical from an antimonial stain on porcelain?
5. What are the blow-pipe tests for the following bases:—Oxide of zinc, oxide of tin, oxide of iron, oxide of lead?
6. How are the sesquisalts of iron reduced to the state of protosalts?
7. Give an account of the principal reagents which will reduce the salts of silver in solution to the metallic state.
8. What are the tests for blood?
9. Describe the properties of cystine.

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Scholarship Examinations.

SCIENCE SCHOLARSHIPS.—FIRST YEAR STUDENTS.

MATHEMATICS.—*Examiner, Professor Purser.*

ARITHMETIC AND ALGEBRA.

1. Calculate to three places of decimals

$$\left(\frac{\sqrt{\frac{2}{3}}+\sqrt{\frac{3}{5}}}{\sqrt{\frac{2}{3}}-\sqrt{\frac{3}{5}}}\right)^{\frac{1}{2}}$$

2. Prove that if we calculate the circumference of a circle whose radius is 100 miles, using for the ratio of the circumference of a circle to the diameter the approximate value $\frac{355}{113}$ the result is not in error more than 4 inches.

3. Show by raising 2 to its powers that its logarithm to the base 10 lies between $\frac{3}{10}$ and $\frac{1}{3}$.

4. A trader lays by £10 a year. This he invests at the end of each year, together with the interest on his fresh savings, in a railway which returns 4 per cent. interest. Show that his accumulation in 30 years will amount to

$$250\left\{\left(\frac{26}{25}\right)^{30}-1\right\} \text{pounds.}$$

5. Calculate the last result—

Given $\log(1{\cdot}04)=0{\cdot}01703$; $\log(3{\cdot}24265)=0{\cdot}51090$

6. The customary discount on a bill for £a for n months exceeds the true discount by £b. Find the rate of interest.

7. Solve the equation—

$$\frac{Lx^2+Mx+N}{lx^2+mx+n}=\frac{La^2+Ma+N}{la^2+ma+n}$$

8. Solve the equation—

$$\sqrt{1+x+x^2}+\sqrt{1-x+x^2}=a.x$$

9. Find the condition that the same values of x and y should satisfy the equations—

$$\left.\begin{array}{l} ax+by+c=0 \\ a'x+b'y+c'=0 \\ a''x+b''y+c''=0 \end{array}\right\}$$

10. Given—

$$\sqrt{x+y}+\sqrt{x-y}=\sqrt{a}$$
$$\sqrt{x^2+y^2}+\sqrt{x^2-y^2}=b$$

find x and y.

11. Exhibit $x^2+y^2+z^2-yz-zx-xy$ as the sum of two squares.

12. Show that the sum of the coefficients of the odd terms of the expansion of $(1+x)^n$ is equal to the sum of the coefficients of the even terms. Write down the coefficients of x^3y^4 in the expansion of $(1+x+y)^9$.

GEOMETRY AND TRIGONOMETRY.

1. Describe an equilateral triangle equal to a given rectilineal figure.

2. From the extremities of a diameter of a circle perpendiculars are let fall upon any chord, thus dividing it into three segments: prove that the extreme segments are equal.

3. Show that if the sides of a right-angled triangle are in geometric proportion, the perpendicular let fall from the right angle on the base divides it in extreme and mean ratio.

4. Prove the identity

$$\sin(\alpha-\beta)\sin(\gamma-\delta)+\sin(\alpha-\gamma)\sin(\delta-\beta)+\sin(\alpha-\delta)\sin(\beta-\gamma)=0.$$

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5. Find two angles whose tangents shall bear to each other a given ratio, such that the difference of the angles shall be the greatest possible.

6. Two angles, θ and ϕ, each less than a right angle, constantly satisfy the relation $a \tan\ \theta + b \tan\ \phi = c$, where $a\ b\ c$ are given positive constants. Prove that $a \sec\theta + b\ \sec\phi$ is least when $\theta = \phi$.

7. Show that

$$\tan^{-1} \frac{2x-y}{\sqrt{3}.y} + \tan^{-1}.\frac{2y-x}{\sqrt{3}.x} = \frac{\pi}{3}$$

8. Prove that in any triangle

$$(a+b)^2 \sin\frac{C}{2} + (a-b)^2 \cos^2\frac{C}{2} = c^2$$

$$\frac{1}{ac} - \frac{1}{bc} = \frac{1}{ab}. \quad \frac{\sin\frac{B-A}{2}}{\cos\frac{C}{2}}$$

9. Prove that if $A+B+C=180^\circ$

$$\cos A = \sqrt{(\sin A + \sin B + \sin C)(\sin B + \sin C - \sin A)\ 4 \sin B \sin C}$$

10. Express the length of a line drawn from the vertex of a triangle to meet the base in terms of the area of the triangle and of the perpendiculars let fall on the line from the extremities of the base.

11. From two points, O and O', are dropped three pairs of perpendiculars on the sides of a triangle—P, P' Q, Q' R, R', are the corresponding feet. Show that $PP' \sin A + QQ' \sin B + RR' \sin C = 0$.

[Any line such as PP' being counted positive if in direction ABC, negative if in opposite direction.]

12. Show that the length of the side of a regular figure of 16 sides inscribed in a circle

$$= R.\sqrt{2-\sqrt{2+\sqrt{2}}}.$$

SECOND YEAR STUDENTS.

MATHEMATICS.—*Examiner, Professor Purser.*

ALGEBRA, TRIGONOMETRY, &C.

1. Eliminate x and y from the equations

$$\left.\begin{array}{l} ax^2+bxy+cy^2=d \\ a'x^2+b'x+\ c\,y=d' \\ a''x^2+b''xy+c''y^2=d'' \end{array}\right\}$$

2. Prove that

$$\frac{a^m+b^m+c^m}{3} > \left(\frac{a+b+c}{3}\right)^m$$

when a, b, c, are positive quantities, and m is positive and greater than unity.

3. Resolve $x^{2n} - 2x^n \cos\theta + 1$ into its quadratic factors.

4. Prove that in any triangle

$$B = \frac{b}{c}\ \sin\ A + \frac{b^2}{2c^2}\ \sin 2\ A + \frac{b^3}{3c^3} \sin 2\ A + \&c.$$

b being less than c.

5. Assuming the factorial form of $\sin\theta$ investigate the sum of the series

$$\frac{1}{1^2} + \frac{1}{2} + \frac{1}{3} + \&c.$$

Examine generally the convergency or divergency of the series

$$\frac{1}{1^n}\quad \frac{1}{2^n} + \frac{1}{3^n} + \&c.$$

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6. Explain the method of eliminating $(n-1)$ variables from n linear equations, and show how to reduce to this problem that of eliminating x between any two algebraic equations.

7. Prove that $(\alpha-\beta)^2\,(\beta-\gamma)^2\,(\gamma-\alpha)^2=4q^3+27\,r^2$ where α, β, γ, are the roots of $x^3+qx+r=0$.

8. Two lines are given in position, it is required to draw a circle passing through a fixed point A, and through the intersection of the lines, so that the length of the line joining the other points where it meets the given lines may be the least possible.

DIFFERENTIAL CALCULUS.

1. Prove that $\frac{d}{dx}(x^n)=nx^{n-1}$ for all values of n without assuming the binomial theorem for other than positive integral exponents.

2. Investigate from first principles the differential coefficients of $\cos x$, $\tan^{-1}x$, $\log_a(x)$.

3. Differentiate

$$\frac{(2x^2-1)\sqrt{1+x^2}}{3x^3} \qquad \frac{\sin\theta}{\cos\theta}+\frac{1}{4}\log\frac{1-\sin\theta}{1+\sin\theta} \qquad \frac{e^x+e^{-x}}{e^x-e^{-x}}$$

CO-ORDINATE GEOMETRY.

1. Investigate by Co-ordinate Geometry the locus of a point such that if perpendiculars be dropped from it on the sides of an equilateral triangle, the sum of their squares shall be constant.

2. The equations of the sides AB, BC, CA of a triangle are respectively

$$y+3x-9=0 \qquad x+y-3=0 \qquad y-x-1=0$$

Determine the position of the angle C, and the three lines drawn through this point; (1) to bisect the angle; (2) to bisect the opposite side; (3) to cut the opposite side at right angles.

3. Examine the formula for transferring from rectangular co-ordinates to oblique, the origin and the axis of x remaining unaltered.

4. Interpret the equations

$$(1)\quad x^2+y^2-6x=0$$
$$(2)\quad (x-x')\,(y-y'')=(x-x'')\,(y-y')$$
$$(3)\quad x^2-y^2=0$$

CONIC SECTIONS.

The Propositions to be proved Geometrically.

1. Tangents at the extremity of any chord of a conic intersect on the diameter which bisects the chord.

2. A parabola is inscribed in a triangle, find the locus of its focus.

3. If a circle and conic section intersect in four points, their common chords will be equally inclined to the axis. Prove this, and examine the limiting case of this theorem when three of the points of meeting coincide.

4. The parameter of the section of a given cone varies as the perpendicular let fall on the section from the vertex of the cone.

5. A line is cut harmonically by the conic pole and polar.

6. If a hexagon be inscribed in a conic, the three pairs of opposite sides intersect in three points which lie in a straight line.

7. Two fixed points, S and H, are the foci of a variable ellipse, two other fixed points, S' and H', on the same straight line are the foci of another variable ellipse, drawn so as to touch the first, find the locus of their point of contact.

CHEMISTRY.—*Examiner, Dr. Andrews.*

1. Give an account of the laws of isomorphism, and of their application to the fixing of the rational composition of minerals.

2. What are the exceptions to the two-volume theory of Gerhardt? Can they be explained?

3. How could you determine the amount of soda or potash in a mineral not attacked by hydrochloric acid?

4. What are the sources of rubidium and cæsium? Describe generally the methods of preparing them, and their characteristic properties.

5. Give a full account of the action of certain organic solutions on polarized light.

6. How is the atomic weight of a vegetable alkali determined?

7. Describe the process of dialysis, and its applications.

MEDICAL SCHOLARSHIPS.—SECOND YEAR STUDENTS.

CHEMISTRY.—*Examiner, Dr. Andrews.*

1. What are the laws according to which gases expand when heated? Are these laws strictly true?

2. Give an account of the specific heat of bodies, and state the relation which exists between the atomic weights and specific heats of the elementary bodies?

3. Explain clearly the cause of the fall of temperature during spontaneous evaporation.

4. Give an account of the relations between certain dark lines in the solar spectrum and the bright lines of the spectra of some of the metals.

5. How is carbonic oxide prepared, and what are its chief properties?

6. State the combinations and properties of cyanogen, and mention its more important compounds.

7. Contrast the properties of carbon and silicon, and of their compounds; showing in what respects they agree, and in what respects they differ from one another?

8. State the theory of volumes, and illustrate it by reference to the gaseous compounds of nitrogen and of carbon.

9. What are the tests for lime and magnesia, and the precautions to be attended to in separating those bases from one another?

10. What are the sources of alumina, and its chief properties?

11. Give an account of the more important alloys of copper.

12. How would you analyse an alloy of tin, silver, and copper?

13. What are the properties of the oxides of mercury?

14. Give an account of the volatile vegetable alcaloids, stating their composition, sources, and leading properties.

15. Contrast the properties of a calculus composed of ammoniaco-magnesia phosphate, with those of one composed of urate of soda.

16. How would you examine urine for creatinine?

ANATOMY AND PHYSIOLOGY.—*Examiner, Dr. Redfern.*

1. Name the specimens numbered 1 to 12, and the side of the body to which each belongs.

2. Describe the attachment, insertion, character, relations, and action of the flexor carpi ulnaris muscle.

3. Describe the position, course, and relations of the femoral artery in the upper third of the thigh.

4. Describe the structure of *striated* and *non-striated* muscle, and state the objections to these kinds of muscle being called *voluntary* and *involuntary*.

5. What modifications occur in the character of the stream of blood as it flows onwards from the heart, and how are they produced?

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Scholarship Examinations.

BOTANY.—*Examiner, Dr. Wyville Thomson.*

1. Describe in detail the structure of an acorn.

2. Describe and contrast a cypsela, a mericarp, an achene, and a caryopsis.

3. Describe the movements which are seen to occur within the vegetable cell, and state any causes which have been suggested for these movements.

4. Describe the structure of the flower in any three British genera of grasses.

5. Describe the mode of reproduction of the genus fucus.

6. Give the character and sketch the geographical distribution of the natural orders Coniferæ, Amentiferæ, and Cupuliferæ.

ZOOLOGY.

1. Describe the principal modifications of the respiratory organs among the vertebrata.

2. Describe the mode of development of a feather.

3. Contrast the dentition of the elephant with that of one of the typical rodents.

4. Name in order, from before backwards, the paired appendages of one of the decapodous crustacea, describing the structure and stating the functions of each pair.

5. Describe the intimate structure and mode of development and reproduction of any sponge.

6. Contrast the structure of the rotifera with that of the infusoria.

THIRD YEAR STUDENTS.

ANATOMY AND PHYSIOLOGY.—*Examiner, Dr. Redfern.*

1. Name the specimens numbered 1 to 6. State to which side of the body each belongs, and describe the characters of the markings on which your opinion is founded.

2. Describe the course and relations of the brachial artery at the bend of the elbow; and the origin, course, and relations of such unusual branches of artery, as become superficial at that part.

3. Describe the appearances presented to the eye on a vertical section from the outer to the inner edge of the kidney.

4. What constituents of bread, potatoes, oatmeal, milk, eggs, and flesh, respectively, serve for nutrition? How are they used in the economy? To what tissues are they applied?

5. Describe the size, shape, connections and relations of the pharynx; and the general characters of the openings into it.

FOURTH YEAR STUDENTS.

ANATOMY.

1. Describe the sphenoidal and the orbital process of the palate bone.

2. Describe the course of the pudic artery in the perineum, and the unusual conditions of its branches which cause increased danger in lithotomy.

3. Describe the course, relation, and distribution of the glosso-pharyngeal nerve, and its branches outside the cranium.

4. Describe a method of dissection which will expose the part of the adductor magnus muscle covered by the insertion of the adductor longus. Mention each part in the order in which it is met with, and state the position it occupies in the space dissected.

PHYSIOLOGY.

1. State what is known of the origin, course, general characters, and structure of the bile ducts within the liver.

2. Describe the first formed blood corpuscles of the human embryo. At what parts of the body and in what way are blood corpuscles formed in the adult.

3. Enumerate the functions of the trunks and branches of each of the cranial nerves.

4. Enumerate the various matters excreted by the human body, and state the objects which you suppose to be gained by the ejection of the several constituents of these matters.

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Scholarship Examinations.

Theory and Practice of Medicine.—*Examiner, Dr. Cuming.*

1. What is the cause of the diarrhœa of Typhoid Fever, and on what principles should its treatment be conducted?
2. What are the physical signs of permanent patency of the aortic valves?
3. Explain the views of Bright, and those of Traube, as to the connexion between Hypertrophy of the Heart and Morbus Brightii.
4. What general and local treatment would you employ in a case of Diphtheria?
5. How would you distinguish between Acute Peritonitis and its hysterical counterfeit?
6. How may Pneumothorax be caused?
7. What are the symptoms of progressive locomotor Ataxy?

Materia Medica.—*Examiner, Dr. Seaton Reid.*

1. How are expectorant medicines classified?
2. What have you to ascertain respecting your patients before you decide which class you shall use?
3. Write prescriptions for two of each class, for an adult and for a child.
4. Name our cholagogue medicines?
5. Write a prescription for the use of each by an adult.
6. What are alterative medicines?
7. Name three of them.
8. Write prescriptions for the use of each by an adult.
9. How many grains are in the ounce in use at present?
10. How many grains are in a "gramme?"
11. How much does a "litre" contain?
12. What is the meaning of the terms, "Endermic," "Tatroliptic," and "Hypodermic?"
13. Name the medicines on the table, and classify them therapeutically.

Surgical Anatomy.—*Examiner, Dr. Gordon.*

1. Describe briefly the perineum and ischio-rectal region, the parts within them, and their surgical diseases.
2. Describe the structure, anatomical relations, and diseases of the thyroid body.
3. Describe the operation of tracheotomy, mentioning briefly those distributions of vessels which make this operation unusually dangerous.

Medical Jurisprudence.—*Examiner, Dr. Hodges.*

1. Mention the symptoms produced by a poisonous dose of muriatic acid.
2. Describe the processes required for the detection of muriatic acid, when mixed with organic matters.
3. In what cases in the treatment of poisoning is the employment of the stomach pump to be avoided.
4. What are the symptoms produced by the following poisons: Savin, aconite, belladonna.
5. Describe the methods to be employed for the quantitative determination of arsenic in organic liquids.
6. Describe the characters of nitro-benzote, and the methods by which it may be distinguished from oil of almonds and other liquids.
7. State the symptoms of poisoning by the essential oil of bitter almonds.

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Scholarship Examinations.

LAW SCHOLARSHIPS.—FIRST YEAR STUDENTS.

ENGLISH LAW.—*Examiner, Professor Molyneux.*

REAL PROPERTY.

1. In what case is it necessary that a lessor should be invested with a leasing power, operating under the statute of uses, to give validity to his demise of land?

2. A dies entitled to land in fee-simple inherited from his deceased mother, leaving his father and maternal grand-uncle his sole surviving kindred. Upon whom will the inheritance devolve, and upon what rules of descent does the right depend?

3. What is the nature of the title, and what are the incidents of a demise, of which the only evidence is payment of rent?

4. What is the object of long terms of years introduced into settlements, and how is that object capable of being realized?

5. What is the difference in legal incidents between a rent reserved on a grant in fee-simple, and a rent reserved on a lease for a thousand years?

6. "The said A. B. doth hereby grant the lands of Blackacre to B. for ever." What interest passes to the grantee by such a deed?

7. Tenant for life, remainder to B in fee-simple; wrongful possession against the tenant for life, during thirty years, down to the time of his death. What are the respective legal rights of the wrongdoer and the remainderman?

8. What is the proper technical assurance by which a *joint tenant* can transfer his interest to his co-tenant, and how does it differ from that by which a *tenant in common* vests *his* interest in his co-tenant, and what is the reason of the difference?

9. Upon what principle were ejectments for non-payment of rent maintainable at common law, and what acts were necessary to entitle the lessor to recover in such ejectments?

10. What was the difference in the terms necessary to create an estate of inheritance in a common law conveyance, and those sufficient for that purpose in a will before 7 Wm. IV. and 1 Vict., ch. 26?

11. What principle, involved in the doctrine of powers, rendered legislative enactment necessary to enable assignees of Bankrupts and Insolvents to appoint?

12. Estate limited to A for life, remainder to B for life, remainder to the right heirs of A, remainder to C and his heirs. What estates do the several persons named take respectively?

13. In what instances is the "*Cy Près*" doctrine appliable?

14. State one or more instances in which the technical rules of construction of wills have been modified by the 7 Wm. IV. and 1 Vict., ch. 26, in order the better to effectuate the intentions of testators?

15. A conveys land by feoffment to B and his heirs. A also conveys *other* lands by feoffment to B and his heirs, to the use of B and his heirs. How do these grants respectively operate?

16. State cases in which (by statutes) an interest in real estate will pass *inter vivos* without a conveyance or other common law assurance?

17. Devise to B and his heirs, on the death of A, without A leaving issue him surviving at the time of his death. Devise in the same will of another denomination of land to A and the heirs of his body, and if he should die without issue, remainder to B and his heirs. What difference existed at common law, as to the legal effect of a conveyance by B of those several interests during the life of A, and what was the reason of such diversity?

SECOND YEAR STUDENTS.

EQUITY.

1. What are the general conditions under which alone relief will be granted in Equity upon mistake *in fact*?

2. Prove that the decided cases which appear to violate the maxim, "ignorantia legis non excusat" do not really contravene it.

3. If a contract be obtained by fraud, what would be the respective decrees,

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according as the fraudulent or the innocent contractor may be the person seeking relief from a Court of Equity?

4. A obtains the conveyance of an estate from B by fraud, and A sells the estate to a purchaser; will Equity, in every case, relieve B and set aside such conveyance, and annul the sale to the purchaser? State in what instances the Court would or would not do so.

5. When is a conveyance of property deemed fraudulent and void as against purchasers for valuable consideration; and when against creditors, distinguishing the action of Courts of Equity, under statutable provisions from that which prevailed before, and which still avails suitors, independent of such enactments?

6. When is a settlement said to be in fraud of the husband's marital rights?

7. State in what instance will the registration of a deed not protect a purchaser?

8. What are the limitations to the equitable principle that contracts in restraint of trade are void?

9. With respect to the exercise of jurisdiction by Courts of Equity on the grounds of *suggestio falsi* and *suppressio veri* respectively, which is more extensive in its application, and why?

10. In what classes of cases do Courts of Equity exercise concurrent jurisdiction with Courts of Common Law, and how is such concurrent authority reconcilable with the notion that the jurisdiction in Equity arises when remedies at Common Law fail?

11. Is there any foundation for the popular idea that Courts of Equity are invested with arbitrary or unlimited authority? Are there any obligations which cannot be forced either at Law or in Equity?

12. State some instances of constructive fraud, and why are transactions which fall within that definition impeachable in Equity, although not based upon any moral delinquency?

13. To what extent is the maxim, "*caveat emptor*" recognised by Courts of Equity in their adjudications upon contracts impeached on the ground of fraud?

14. In what case will a contract with a lunatic be recognised?

15. Is there any class of cases in which a Court of Equity will not set aside a contract obtained by fraud, although the parties do not stand *in pari delicto*?

THIRD YEAR STUDENTS.

COMMON LAW.

1. How does the question of partnership vary as one between partners *inter se* and with regard to third persons.

2. How do Courts of Equity and Courts of Law differ with respect to the liability of married women, upon contracts made by them?

3. What warranty is *implied* in every marine insurance on a voyage policy?

4. What is the difference between a contract of freightment by charter party, and that of a bill of lading?

5. Why is it expedient on the part of the vendor to observe the usage of conveyancers, by having inserted in his conveyance a covenant for title on his part against his own acts, and is there any state of facts under which he will be liable beyond the terms of his covenant?

6. A. B. makes a lease of Blackacre, by deed, to C. D., at £20 per annum. A. B. afterwards demises Whiteacre to the same C. D., as tenant from year to year, at £20 rent. After some years, A. B. writes a letter to C. D., by which he proposes to reduce the rents to £10 respectively, and receives the reduced rents for some years. A. B., upon a subsequent gale of rent falling due, demands it at the original rate of £20 for each denomination, and sues the tenant accordingly. The tenant resists the demand. What must be the legal result?

7. An agent without disclosing his agency, purchases for his principal without paying the price. What is the full extent of the vendees' rights upon the contract?

8. Two bills of exchange are accepted, payable on the 1st March, 1867. The drawer has a running account with the acceptor, varying from day to day, and on foot of which the bills were accepted. The drawer indorses one bill to X. Y., in the course of trade, on the 20th April, and for valuable considera-

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tion; and on the 2nd March indorses the other bill to X. Y., for valuable consideration. The indorsee brings his action on both bills against the acceptor, who defends the action on the ground that the balance of account between him and the drawer was against the latter from the 10th April, continuously. What are the legal rights of the indorsee with respect to those bills?

9. State some of the instances in which a promise to pay is *implied* in dealings between man and man.

10. What are the usual incidents to create a legal tender? Under what circumstances does the law dispense with such incidents?

11. What is the difference between the remedies upon contracts for the sale of lands, as administered at Law and in Equity respectively?

12. What classes of debts can alone be set off?

13. What is a good, and what a bad accord by way of defence to an action for recovery of a debt?

14. When different debts are due to the same person, and a part payment made, to which of the debts is that payment to be appropriated?

SENIOR SCHOLARSHIPS.

MODERN LANGUAGES.—*Examiner, Professor Meissner.*

FRENCH.

Translate into French:

I.—The human species, according to the best theory I can form of it, is composed of two distinct races, *the men who borrow and the men who lend.* To these two original diversities may be reduced all those impertinent classifications of Gothic and Celtic tribes, white men, black men, red men. All the dwellers upon the earth, "Parthians and Medes, and Elamites," flock hither, and do naturally fall in with one or other of these primary distinctions. The infinite superiority of the former, which I choose to designate as the *great race*, is discernible in their figure, port, and a certain instinctive sovereignty. The latter are born degraded. There is something in the air of one of this cast, lean and suspicious; contrasting with the open, trusting, generous manners of the others. . . . To one like Elia, whose treasures are rather cased in leather covers than closed in iron coffers, there is a most formidable class of alienators; I mean your *borrowers of books*, those mutilators of collections, spoilers of the symmetry of shelves, and creators of odd volumes. Reader, if haply thou art blest with a moderate collection, be shy of showing it; or if thy heart overfloweth to lend them, lend thy books, but let it be to such a one as S. T. Coleridge. He will return them with usury, enriched with annotations tripling their value.—CHARLES LAMB.

II.—(*a*) Give a short summary, in French, of some one play of Corneille, of Racine, and Voltaire.

(*b*) Give a short sketch of the life of Alfred de Vigny.

(*c*) Give some instances of Latin archaisms, lost in classical Latin, but preserved in modern French.

(*d*) When does the intercalation of *b* and *d* take place? Give examples.

(*e*) French substantives are derived from what Latin parts of speech.

GERMAN.

Translate into German:

I.—Identical in race and scarcely differing in language, the Irish of the North and the Scotts of the Western Isles had for two centuries kept up a close and increasing intercourse. Some thousand Scottish families had recently emigrated from Bute, Arran, and Argyleshire, to find settlements on the thinly-populated coasts of Antrim and Down. The Irish chiefs had sought their friendship, intermarried with them, or made war on them as the humour of the moment prompted; but their numbers had steadily

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increased, whether welcome or unwelcome, and at Elizabeth's accession they had become objects of alarm both to the native Irish whom they threatened to supplant and to the English whom they refused to obey.—J. A. Froude.

Translate into English:

II.—Die Komödie will durch Lachen beſſern; aber nicht eben durch Verlachen; nicht gerade diejenigen Unarten, über die ſie zu lachen macht, noch weniger bloß und allein die, an welchen ſich dieſe lächerliche Unarten finden. Ihr wahrer allgemeiner Nutzen liegt in dem Lachen ſelbſt, in der Uebung unſerer Fähigkeit das Lächerliche zu bemerken; es unter allen Bemäntelungen der Leidenſchaft und der Mode, es in allen Vermiſchungen mit noch ſchlimmern oder mit guten Eigenſchaften, ſogar in den Runzeln des feierlichen Ernſtes, leicht und geſchwind zu bemerken. Zugegeben, daß der Geizige des Moliere nie einen Geizigen, der Spieler des Regnard nie einen Spieler gebeſſert habe; eingeräumt, daß das Lachen dieſe Thoren gar nicht beſſern könne: deſto ſchlimmer für ſie, aber nicht für die Komödie. Ihr iſt genug, wenn ſie keine verzweifelte Krankheiten heilen kann, die Geſunden in ihrer Geſundheit zu befeſtigen. Auch dem Freigebigen iſt der Geizige lehrreich! auch dem der gar nicht ſpielt, iſt der Spieler unterrichtend.—Leſſing.

III.—Herodes.

Ich würde nicht den Muth zur Antwort haben,
Wenn ich, was ich auch immer wagen mochte,
Des Ausgangs nicht gewiß geweſen wäre,
Das war ich aber und ich war es nur,
Weil ich mein Alles auf das Spiel geſetzt!
Ich that, was auf dem Schlachtfeld der Soldat
Wohl thut, wenn es ein Allerletztes gilt,
Er ſchleudert die Standarte, die ihn führt,
An der ſein Glück und ſeine Ehre hängt,
Entſchloſſen von ſich in's Gewühl der Feinde,
Doch nicht, weil er ſie preiszugeben denkt:
Er ſtürzt ſich nach, er holt ſie ſich zurück,
Und bringt den Kranz, der ſchon nicht mehr dem Muth,
Nur der Verzweiflung noch erreichbar war,
Den Kranz des Siegs, wenn auch zerriſſen, mit.

Hebbel.

IV.—Write a short summary, in German, of Jean Paul's *Advocat Siebenkäs*.

ITALIAN.

I.—Translate into Italian:

Before the invention of the art of Printing, the only employment by which a man of letters could make anything by his talents, was that of a public or private teacher, or by communicating to other people the curious and useful knowledge which he had acquired himself, and this is still surely a more honourable, a more useful, and, in general, even a more profitable employment than that other of writing for a bookseller, to which the art of printing has given occasion. The time and study, the genius, knowledge, and application requisite to qualify an eminent teacher of the sciences, are at least equal to what is necessary for the greatest practitioners in law and physic. —Adam Smith.

II.—Translate into English:

Ho visitato le mie montagne, ho visitato il lago de'cinque fonti, ho salutato per sempre le selve, i campi, il cielo. O mie solitudini! o rivo, che mi hai la prima volta insegnato la casa di quella fanciulla celeste! quante volte ho sparpagliato i fiori su le tue acque che passavano sotto le sue finestre! quante volte ho passeggiato con Teresa per le tue sponde, mentr' io inebbriandomi delle voluttá di adorarla, vuotava a gran sorsi il calice della morte.—Lettere di Jacopo Ortis.

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III.—Ahi Pisa, vituperio delle genti
Del bel paese là dove il Si suona ;
Poi che i vicini a te punir son lenti,
Movasi la Capraja e la Gorgona,
E faccian siepe ad Arno in su la foce,
Si ch' egli anneghi in te ogni persona.
Che se il Conte Ugolino avea ria boce
D' aver tradita te delle castella,
Non dovei tu i figliuoi poree a tal croce,
Innocenti facea l' età novella
Novella Tebe, Uguccione e il Brigata,
E gli altri duo che il canto suso appella.

DANTE—*Inferno.*

HISTORY.—*Examiner, Professor Yonge.*

1. What were the circumstances of the establishment of Magna Charta? What steps were subsequently taken to confirm it?

2. Between the reigns of John and Charles I. what kings of England had provoked their subjects to active resistance?

3. What were the circumstances that led to the death of Lady Jane Grey?

4. What resemblance was there between the causes which led to the rebellion against Charles I., and those which led to the rebellion against James II., and who were the original movers of the two movements?

5. What was the South Sea Bubble in England, and what nearly contemporaneous events in France did it resemble?

6. What were the circumstances under which the Septennial Act was passed? Who were the chief Ministers at the time?

7. What were the priniciples contended for by the Ministry and the Opposition in the debates on the Regency Bill of 1788?

8. In French History what was the conspiracy of Cinq Mars? What the Day of Dupes?

9. Describe the rebellion of the Fronde.

10. Who were Sully, Louvais, Colbert, Cardinal Dubois, Cardinal Fleury, Marshal Saxe, the Prince de Soubise, Turgot, d'Epremesnil, Mirabeau? (Two lines about each will be sufficient).

11. Who were the Encyclopedists, and what was their influence on the French people, and on subsequent events?

12. What French generals won or lost the battles of Ivry, Rocroy, Senef, Nordlingen, Nierwinden (or Landen), Dettingen, Rosbach, Fleurus?

SUBJECT FOR ESSAY.

(*Not to exceed four pages.*)

THE DIFFERENCE, AND CAUSES OF THE DIFFERENCE, BETWEEN THE ENGLISH REVOLUTION AND THE FIRST FRENCH REVOLUTION.

BOTANY.—*Examiner, Dr. Wyville Thomson.*

1. Describe the structure of the flower in the genera, avena, melica, phalaris, and agrostis.

2. Describe minutely the structure and the mode of development of the cocoa-nut (fruit).

3. Describe a lycopodium, stem, leaves, and fruit.

4. State what is known with regard to the origin and development of the embryo in flowering plants.

5. What are the differences in composition between the crude and the elaborated sap? How have these changes been produced?

6. Sketch the geograpical distribution of the most important groups and genera of the compositæ.

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ZOOLOGY.

1. Describe the condition of the placenta in the rat, the cat, the hare, the cow, and the monkey.

2. Describe the modifications of the sternum in the different vertebrate groups.

3. Give in detail the characters of the different groups of the amphibia, and contrast the amphibia with (1) reptiles and (2) fishes.

4. Name in order from before backwards the paired appendages of any one of the typical arachnida, and state their homologies.

5. Describe the arrangement of the viscera in doris, and contrast it with their arrangement in buccinum or fusus.

6. Describe the development of the centres of the vascular system in the embryo of the dog or any other mammal.

7. Give the orders of the hydrozoa, and state the modifications of the reproductive process which are met with in each.